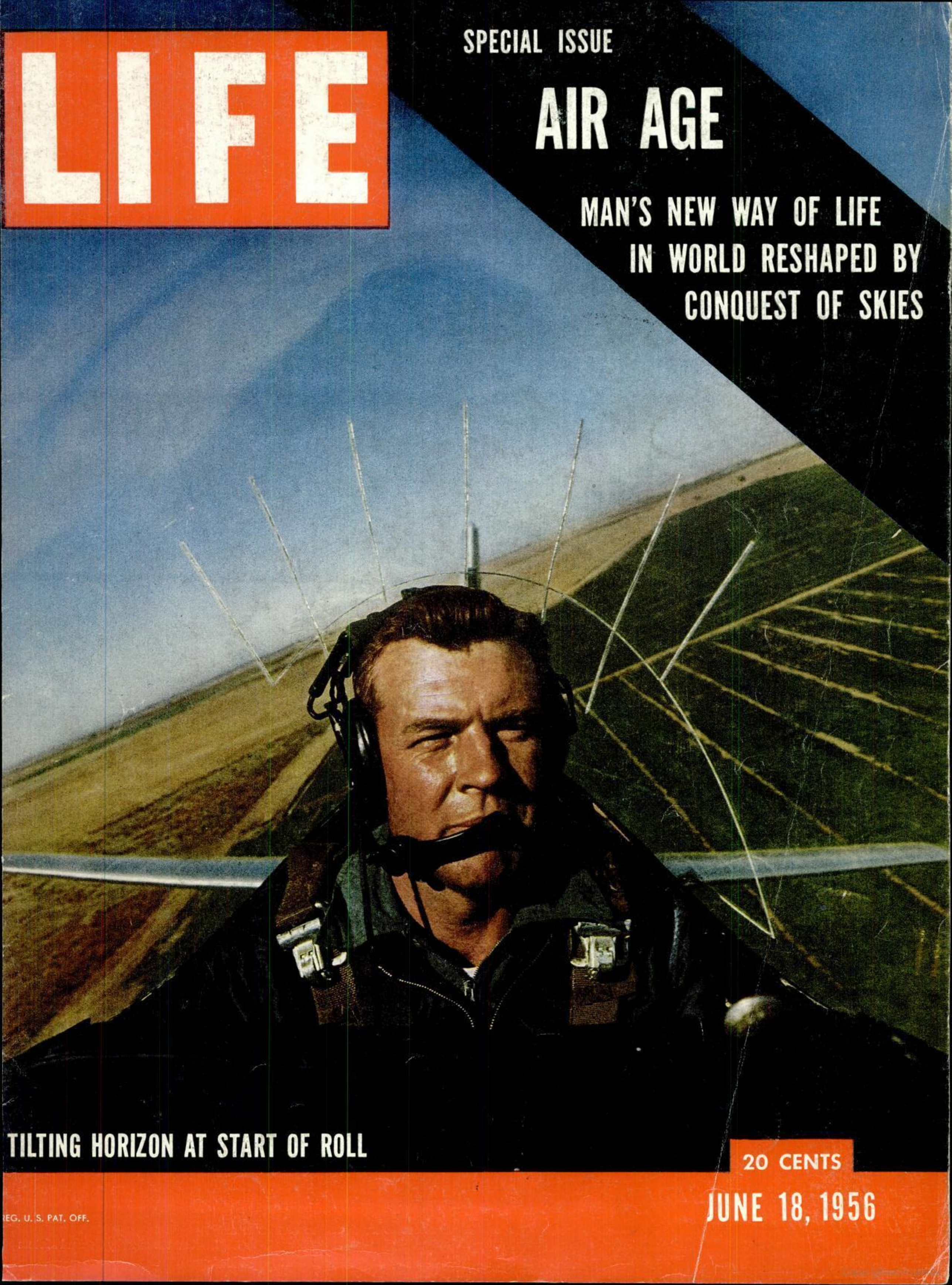
LIFE

SPECIAL ISSUE

AIR AGE

MAN'S NEW WAY OF LIFE IN WORLD RESHAPED BY CONQUEST OF SKIES



TILTING HORIZON AT START OF ROLL

20 CENTS

JUNE 18, 1956

EG. U. S. PAT. OFF.

Washes everything but the kitchen sink

HERE is a dishwasher that's a spic and span *pan* washer too.

Put in your greasy fry pans or griddles, your big bulky broiler pan, king-size kettles, mixing bowls and all the rest of those hate-to-wash utensils it takes to get a meal.

You simply press the Starter Button, walk away —and forget the whole job.

22 swirling needles of hot sudsy water will scour and scrub each piece spanking-clean all over—top, bottom, front and back. Then they'll be dried automatically — ready to use again.

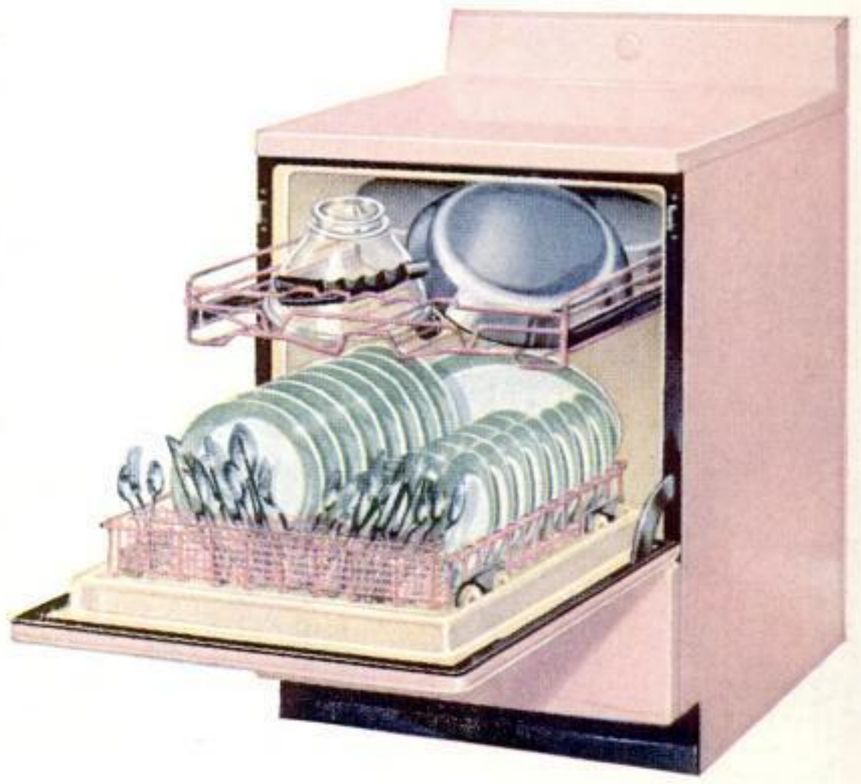
As for dishes—just put them in and forget them. The superb Turbo-Spray Washing Action reaches into the tines of forks, the insides of glasses, the bottoms of cups. Even 3-day hard egg and stubborn lipstick and sticky buttermilk go down to defeat. Yet your finest crystal and china are *safer* than when washed by hand.

Any way you look at it, this new Frigidaire Dishwasher is what every woman has hoped for.

Take capacity, for instance. At one time, it can handle a complete dinner service for 8 *plus* pots and pans, or the full day's dishes for a family of 4, or 70 cups and saucers—to give you an idea.

Then there's the pop-up Screen Guard that prevents food from being redeposited on the dishes. There's such flexible, easy loading. There's the way it makes less than 10 gallons of water do the work of 460, and gets rid of most harmful bacteria because of its hotter-than-hands-can-stand water and Radiant Heat drying. And so much more.

Why wait another minute? This great new Frigidaire Dishwasher can cut your dishwashing time *to one-fifth*. See it *today*.



Four models: Under-Counter; Freestanding Cabinet; Sink and Dishwasher Combination; Portable. All surprisingly easy to install. All in heavenly colors, inside and out.



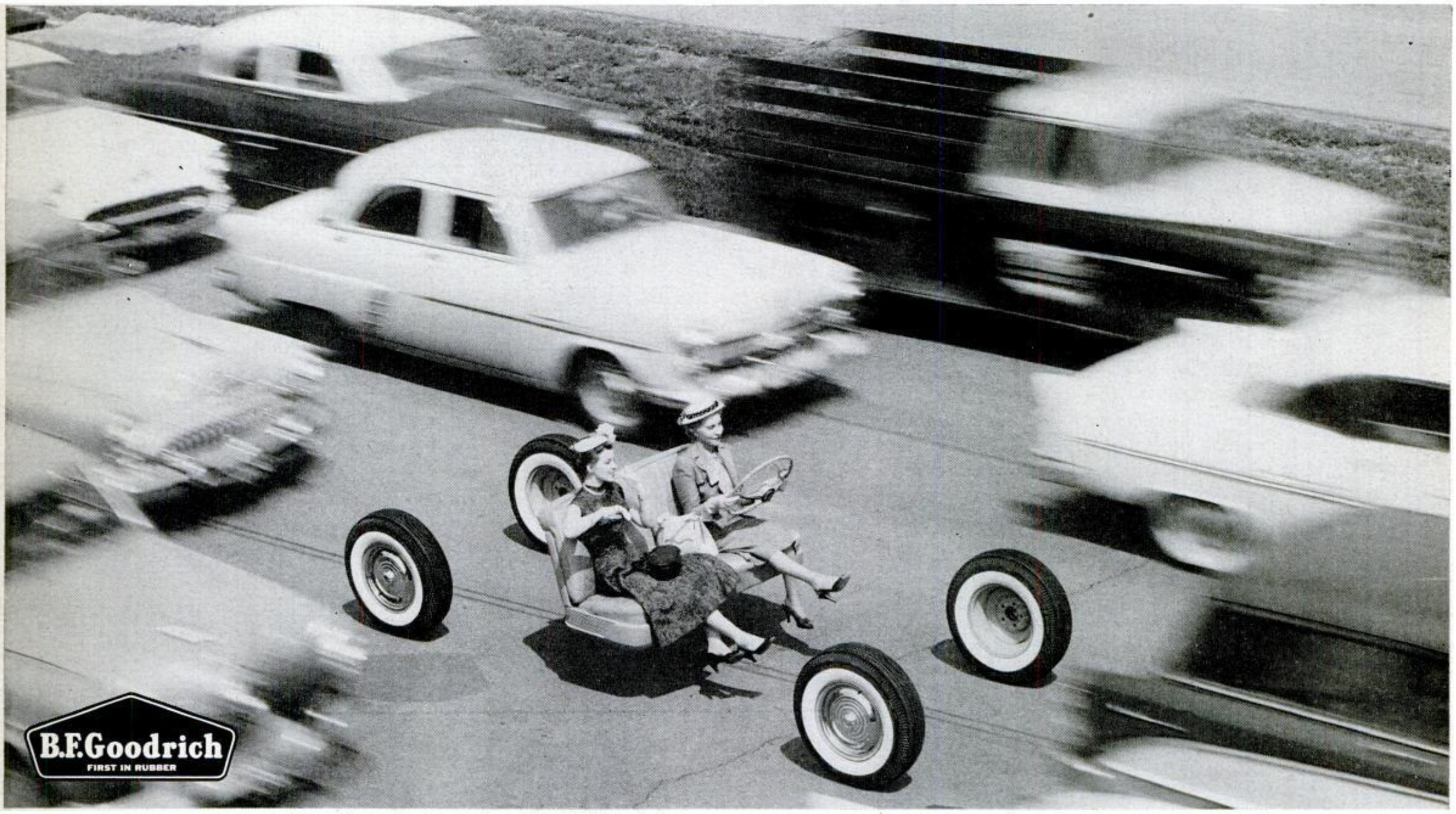
FRIGIDAIRE *Automatic* **DISHWASHER**

GM GENERAL MOTORS

Built and Backed by General Motors

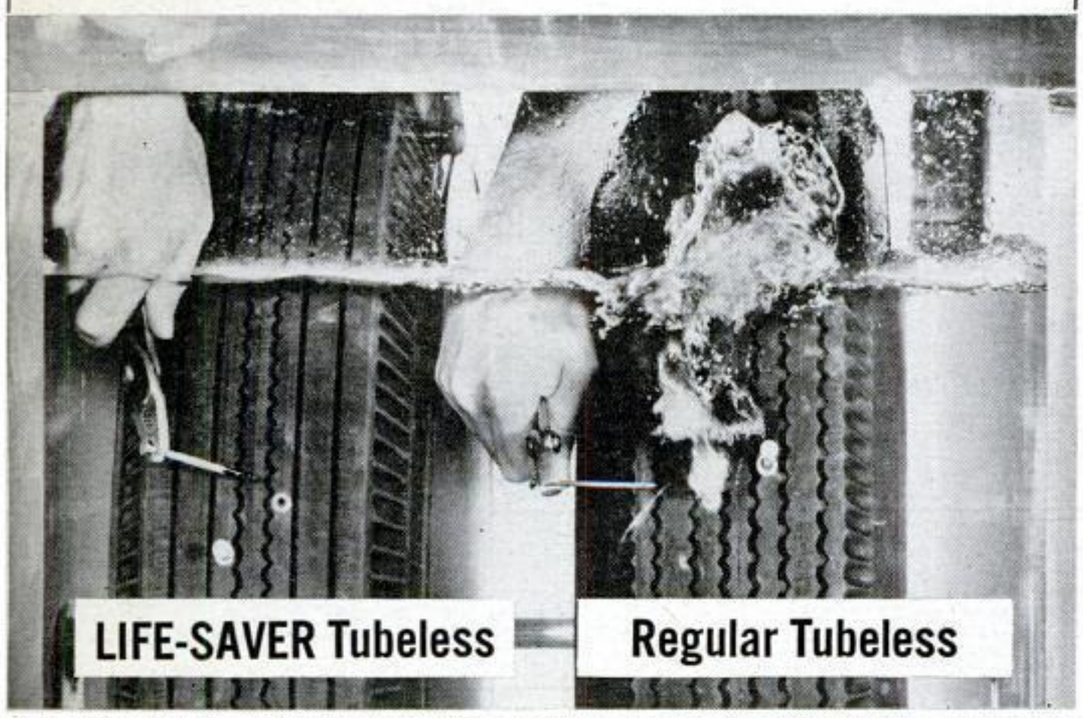
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B.F.Goodrich Tubeless
—*because you're only as safe as your tires*



What a spot for tire trouble! When you drive down the highway in heavy traffic, with no place to stop or turn off, did you ever picture your car like this? It's easy to see how much your safety depends on your tires. They are your only contact with the road. You can't afford to have them fail at a time like this. Because *you're only as safe as your tires.*

UNDERWATER PROOF: LIFE-SAVERS SEAL PUNCTURES NAIL IN OR OUT



Both of these tires were punctured, then put into a tank of water. Nail was pulled from the regular tubeless. It leaked immediately, as the air bubbles show. Then nail was pulled from the LIFE-SAVER Tubeless. No bubbles . . . no air loss!

What causes highway accidents? Bad tires and bad driving, say turnpike authorities. So, protect yourself against both. Always drive safely . . . and get the three-way protection of B. F. Goodrich LIFE-SAVER Tubeless.

A patented inner liner in LIFE-SAVERS changes bruise-blowouts to s-s-slowouts. Grip-block treads defy skids, give quicker stops. Unlike regular tubeless, LIFE-SAVERS seal punctures *permanently,* nail in or out. They are backed by 8 years of use and proof that only the Inventor of Tubeless, B. F. Goodrich, can offer.

For maximum safety, get Nylon-Plus LIFE-SAVERS

They give the added strength of nylon . . . world's best protection against blow-outs started by bruising impacts.

Discover today how little it costs to get the three-way protection of LIFE-SAVERS against bruise-blowouts, skids and punctures. See your B. F. Goodrich retailer now, during the Safety Tire Sale. Find him listed in the Yellow Pages under "Tires".

B. F. Goodrich Tire and Equipment Company, A Division of The B. F. Goodrich Co., Akron, O.

FREE SAFETY REFLECTOR
when you join the Safe Driver League

Yours without obligation when you sign a safe driving pledge at your B. F. Goodrich retailer's. Highly visible at night. Protects you when parked or stopped. Adhesive-backed to stick on trunk or bumper. Do your share to help keep our highways safer . . . join the League today!



SAFETY TIRE SALE NOW ON: Get highest trades while it lasts! Terms as low as $1.00 DOWN at most retailers

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Vol. 40 No. 25 SPECIAL LIFE ISSUE June 18, 1956

REG. U.S. PAT. OFF.

CAPTAIN EDDIE TALKS ABOUT THE MASTERY OF THE SKY

INTRODUCING THE AIR AGE

This special issue is entirely devoted to the air age—except for the dramatic story of the President's operation, reported on pages 49–52. As the issue was going to press LIFE *showed it to Eddie Rickenbacker and asked him to write an introduction. Captain Eddie's life and experience, unique in U.S. aviation, spans most of the airplane's history and both its military and civilian development. As an aviation businessman he is the active head of Eastern Airlines, a $173 million corporation.*

When I looked at this special issue, I found my mind traveling over a personal air past which until then had not seemed so distant. That 2,000-mph X-2 at Edwards Air Force Base (*pp. 67–82*) made me think of the wood-and-fabric 120-mph Nieuport in which, nearly 40 years ago, I fought my first air battle over France. Those wonderful pictures of the beauty of the airman's sky (*pp. 14–25*) brought back memory of the most magnificent sight of this earth I have ever had—the Himalayas at sunset, during a crossing of the Hump in a later war. And as I studied the pictures showing what goes on in the American air during a single 24-hour span I remembered what it was like when I became an airline operator 33 years ago—dirt runways, no ground-to-air radio, a box lunch for the intrepid passengers, and a tail skid for a brake. It all seemed difficult enough then; but now I can say that the daily management of the U.S. air is one of the most complex and intricate operations done by men.

LIFE makes clear what is happening to us; how, paradoxically, we are absorbing the air age revolution without really understanding it (*pp. 135–152*)—how the need and the will to master the world's air has brought changes which are reshaping our economy, our cities and our global relationships. The issue shows how military and civilian aviation are intertwined—how the progress of commercial flying depends on military daring and experimentation for new engines and new planes (*pp. 166–176*). The fold-out picture on page 154 underlines the fact that the Air Force's need for many different planes sustains dozens of big corporations and thousands of engineers (*p. 161*) who can give us a Super Constellation or a DC-8 jet.

The most important point is that we are only now crossing the threshold of the air age; its true wonders are not yet at hand—they are only imminent. For what has seemed forever I have struggled, along with my competitors and fellow pioneers, to persuade people to fly. Last year U.S. airlines carried more than 40 million passengers; but this total was made up of only 10 million individuals using air services over and over. In fact only about 8% of the American public has ever flown at any time. This percentage, however, is growing with the advent of the first true airborne generation. I do not expect to be on hand for the first voyage to Mars, nor am I particularly interested in organizing a coach service in that direction. But this I say, as one who ventured with the vanguard into the shallows of space, let us go forward boldly, making sure of our rightful place in the air, for freedom and for good.

Eddie Rickenbacker

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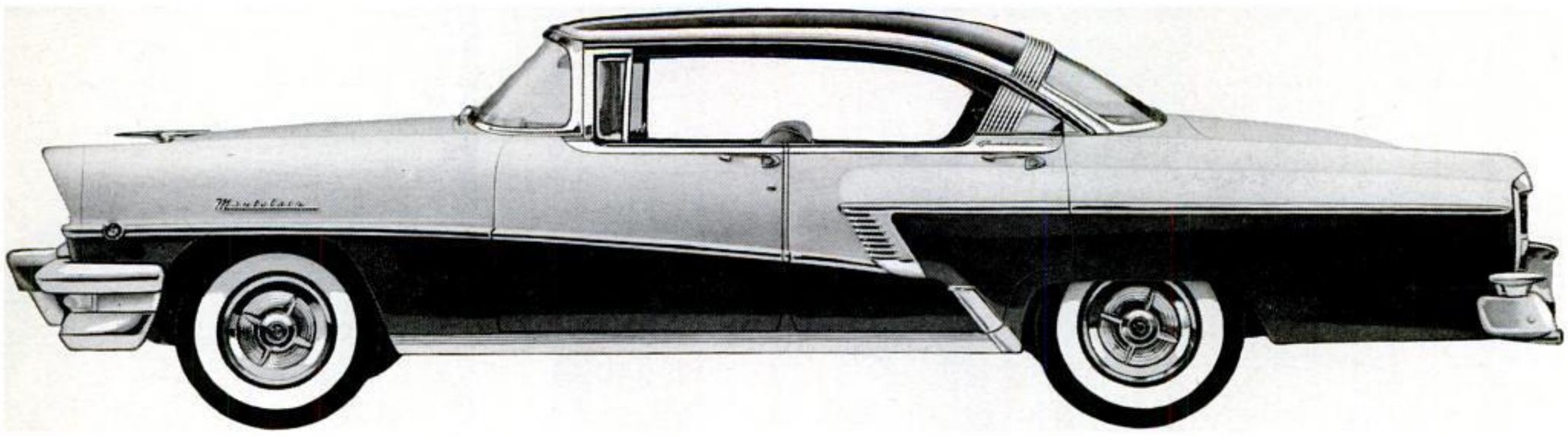
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VOLUME 40 NUMBER 25



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. . . 10 EVERY WEEK FOR 8 WEEKS

ED SULLIVAN'S $425,000 MERCURY CONTEST

SPECIAL BONUS AWARDS

$10,000 CASH to new Mercury buyers
Awarded *instead* of new Phaeton if you buy a new Mercury during contest and *before* being advised of winning one of the top 10 weekly prizes.

$2,000 CASH to used car buyers
Awarded in *addition* to new Phaeton if you buy a used car during contest and *before* being advised of winning one of the top 10 weekly prizes.

(See Official Entry Blank for details)

2,680 PRIZES IN ALL—EASY TO ENTER—YOU CAN ENTER EVERY WEEK—CONTEST NOW ON!

EACH WEEK THESE PRIZES WILL BE AWARDED

1ST PRIZE—Mercury Montclair Phaeton plus an all-expense paid weekend trip to New York for two via American Airlines DC-7 Flagship with suite at famous Waldorf-Astoria Hotel, special guests of Ed Sullivan at his television show.

2ND-10TH PRIZES—9 Mercury Monterey Phaetons—Like all Phaetons, the Monterey features distinctive low silhouette styling and 4-door hardtop beauty.

11TH-35TH PRIZES—25 General Electric portable TV sets—Compact, smart, latest model, light and easy to carry. Colorfully two-toned.

NEXT 300 PRIZES—Beautiful Elgin American Signet automatic cigarette lighters with winners' initials . . . autographed by Ed Sullivan.

HERE'S ALL YOU DO TO ENTER!

1. Go to your Mercury dealer today
2. Pick up Official Rules and Entry Blank
3. Complete last line of Mercury Phaeton rhyme
4. Mail Official Entry Blank to "Mercury Contest"

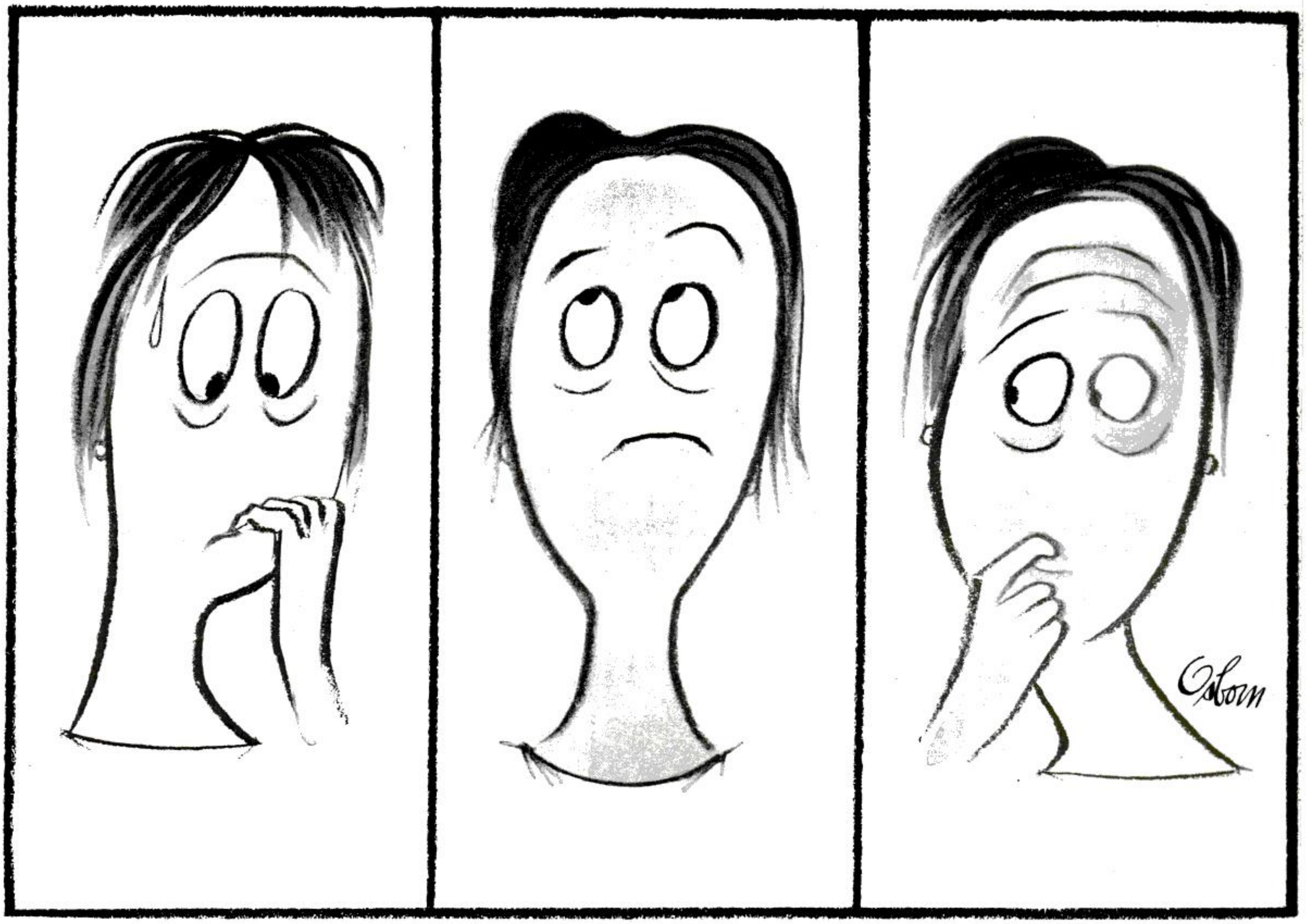
GO TO YOUR

MERCURY DEALER

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Why have doubts about appliance service?

Perhaps at some time or other you've been annoyed by a household appliance.

It sputters along, groans and sighs, and then just quits! On your busiest day, too. This sometimes happens in the best regulated homes—to the best of appliances—to *anything* with moving parts.

However, if your major appliance carries the General Electric nameplate, there's no need to be bothered or bewildered.

Just telephone for local General Electric Major Appliance Service.

The General Electric Appliance Service Technician is factory-trained. He has the expert skills, the genuine General Electric parts to place your appliance in fine working order—in the shortest possible time. You will find, too, that service costs are moderate.

Keeping you constantly happy and content with your General Electric products is our primary concern. Any time *any* of your major appliances need attention . . . refrigerator, range, dishwasher, room air-conditioner . . . remember that one quick phone call brings fast and friendly service.

After all, our *best* customers are the people who *know* that General Electric sells the best appliances and gives the best service.

Look in the classified telephone directory for the name and address of *your* local General Electric Service Technician.

General Electric Company, Product Service, Appliance Park, Louisville 1, Kentucky.

MAJOR APPLIANCE SERVICE

FRIENDLY, SWIFT, NEARBY



Progress Is Our Most Important Product

GENERAL ELECTRIC

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4 delicious new hot weather shortcuts from Carnation

Every one a complete One-Dish Meal



"from contented cows"

Carnation's special blending qualities make them possible. No other form of milk will do!



RECIPE 1 〉 Carnation 3-minute Cheese Sauce in

HAM AND CHEESE BISCUIT BAKE

The short-cut secret is a new, wonderfully *smooth* Cheese Sauce that's ready in 3 minutes! Better-blending Carnation makes it possible; *ordinary milk won't do.* To make sauce, mix 1⅔ cups (large can) *undiluted* Carnation with 1 tablespoon prepared horseradish and 1 teaspoon dry mustard in saucepan. Simmer to just below boiling (2 mins.). Add 2 cups grated process American cheese. Stir over low heat until cheese melts (1 min.). Alternately layer 3 cups diced cooked ham and 2 cups well-drained cooked green beans in 2-qt. casserole. Pour sauce over casserole. Top with biscuits. Bake in hot oven (425°F.) 15-20 minutes. 4-6 servings.



RECIPE 2 〉 Carnation lump-free Cream Sauce in

ASPARAGUS, CHEESE AND EGG CASSEROLE

You get a headstart with an easy-to-make, *always lump-free* Cream Sauce, thanks to the special blending qualities found in Carnation but in no other form of milk. To make the sauce, blend 2 tablespoons flour, 2 tablespoons butter, ¼ teaspoon salt, ¼ teaspoon pepper in saucepan over low heat. Add 1⅔ cups (large can) *undiluted* Carnation. Stir until thickened and smooth. Alternately layer 2 cups cooked 1-inch asparagus cuts, 3 sliced hard-cooked eggs, 8 thin process American cheese slices, ¼ cup chopped toasted almonds in buttered 1-qt. casserole. Pour sauce over casserole. Bake in moderate oven (350°F.) 20 minutes. Serves 4-6.

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RECIPE 3 〉 Carnation 3-minute Cheese Sauce in

TWO-WAY TUNA AND MACARONI CHEESE LOAF

Serve it hot one day—cold the next! Smoothest loaf you ever made. Start with 3-Minute Cheese Sauce from recipe above. Mix 2 beaten eggs, ¼ cup diced green pepper, ¼ cup diced pimiento, 2 tablespoons grated onion, 2 cups well-drained flaked tuna, 1 cup soft bread crumbs, 3 cups cooked macaroni, ½ teaspoon salt together. Blend Cheese Sauce with macaroni mixture. Place in paper-lined loaf pan (9 x 5 x 3). Bake in moderate oven (350°F.) 25-30 minutes. Turn out on platter; remove paper. Serve at once, or chill and serve cold. Serves 8-10.



RECIPE 4 〉 Carnation lump-free Cream Sauce in

CREAMED CHIPPED BEEF AND RICE INDIVIDUALS

It's the smooth, lump-free Cream Sauce resulting from Carnation's special blending qualities that makes this recipe easy, failure-proof, delicious. You begin with the Cream Sauce recipe above. Then mix together ¼ cup diced celery, 2 tablespoons diced green pepper, 2 chopped hard-cooked eggs, 1 cup cooked rice and 1½ cups chopped, dried beef. Rinse beef in hot water; drain before use. Place ¾ cup beef mixture in each of 4 small casseroles; pour the cream sauce over each casserole. Mix. Bake casseroles in moderate oven (350°F.) 15 minutes. Makes 4 servings.

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Should you care what they drink this summer?



Look for the Sunkist quality stamp

What you give them to *drink* in summer is every bit as important as what they *eat.* And when one summer drink, *fresh* lemonade–

...is a pure, natural fruit drink–no artificial flavorings or preservatives–you know this because you make it yourself

...is rich in vitamin C (the vitamin we all need every day, especially in hot weather)

...cools and refreshes more deeply than any other

...is wonderfully delicious (kids love it)

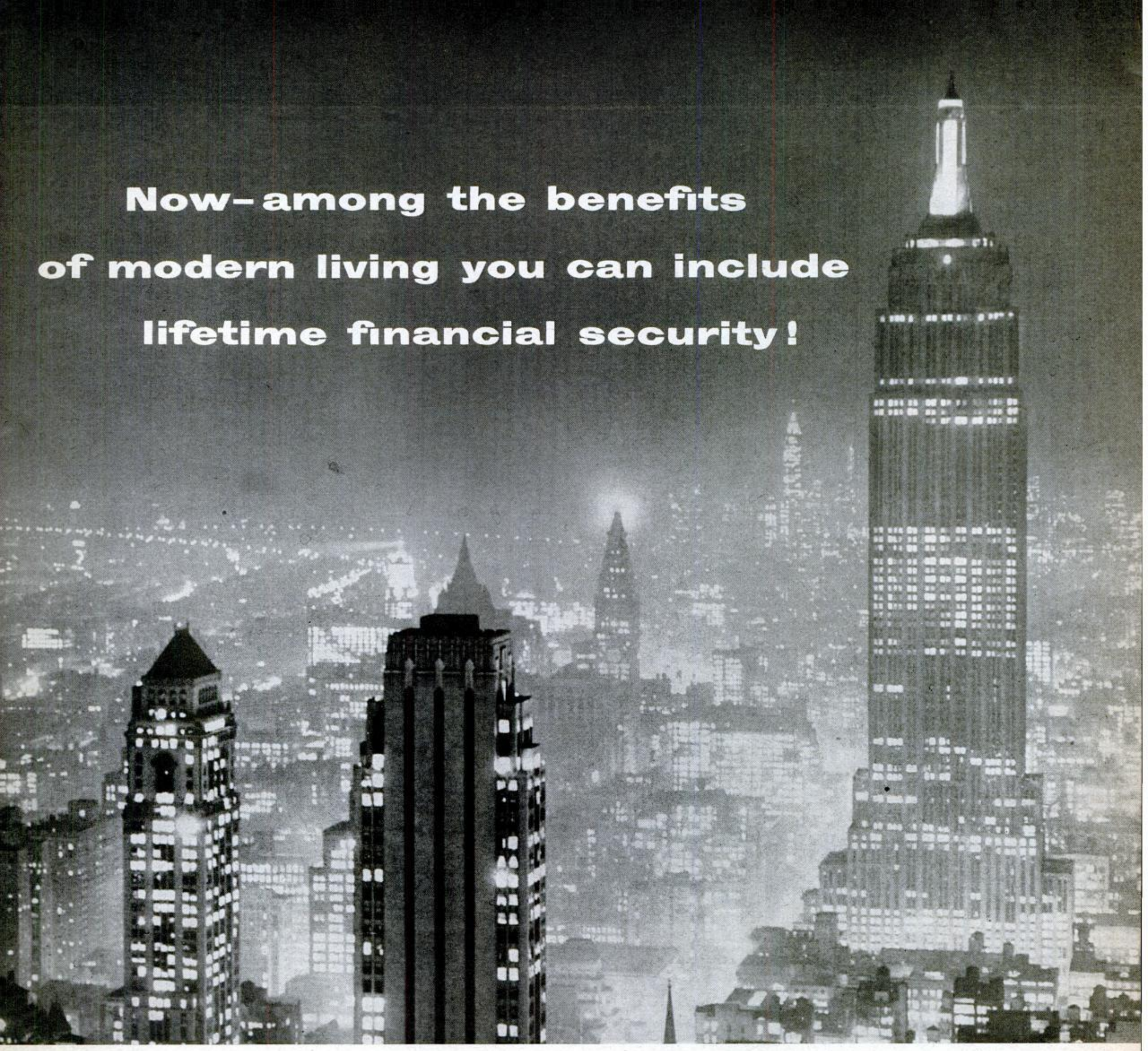
–doesn't it make good sense to serve fresh lemonade to your family? Medical authorities think so. How about you?

Sunkist® fresh lemons for *real* lemonade

Fresh lemonade all summer means healthier children next fall...healthier grownups, too!

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New York Life's WHOLE LIFE insurance offers your family protection of at least $10,000 today—can pay you a monthly income at retirement—all at budget cost!

Today, many young family men are finding it increasingly difficult to give their families all the important advantages progress has made possible—and at the same time build a vital backlog of financial security.

New York Life's Whole Life policy was designed to meet this problem. Its minimum face amount of $10,000 permits economies which are passed on to you in lower premium rates. These low rates can help make it possible for you to take out even more insurance protection and still have enough left in your budget to enjoy other good things of modern living. Yet, from the start, your family is substantially protected in case you should die unexpectedly.

Cash values build fast. At the beginning of the third year a growing fund is available for emergencies. At retirement, these substantial cash values can pay you a monthly income *for the rest of your life.*

Can you think of any simpler, surer way to provide for tomorrow while you're getting the most out of life today?

$10,000 MINIMUM FACE AMOUNT could serve as a solid foundation for family protection. Issued to age 70, Whole Life is usually available at higher rates to those who cannot qualify for insurance at standard rates due to health or occupation.

ANNUAL PREMIUM per $1,000 for standard Whole Life insurance is only $17.59 issued at age 25; $23.59 at 35; $33.64 at 45. Policies with waiver of premium and double indemnity benefits are available at most ages at slightly higher premium rates. Dividends can be used to reduce premium payments.

CASH AND LOAN VALUES accumulate rapidly —equal to the full reserve at the end of the seventh year; i.e.: Seventh year cash value per $1,000 taken out at age 25 is $92; at 35, $123; at 45, $164.

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GENERAL ELECTRIC SKILLET

with thermostat makes frying, cooking easier... meals tastier

New low price **$17.95***

**Manufacturer's recommended retail or Fair Trade price.*

General Electric Company, Housewares and
Radio Receiver Division, Bridgeport 2, Connecticut



What convenience—cook right at the table! You can put this handsome new General Electric Skillet right on the tablecloth. *Enjoy* meals, no jumping up!



1. Now you can set the correct temperature when you fry and cook, just as you do when you bake! Like a modern oven, the new General Electric Skillet has a built-in thermostat. You dial the heat, put the food in when the light signals, and after that the temperature never varies.



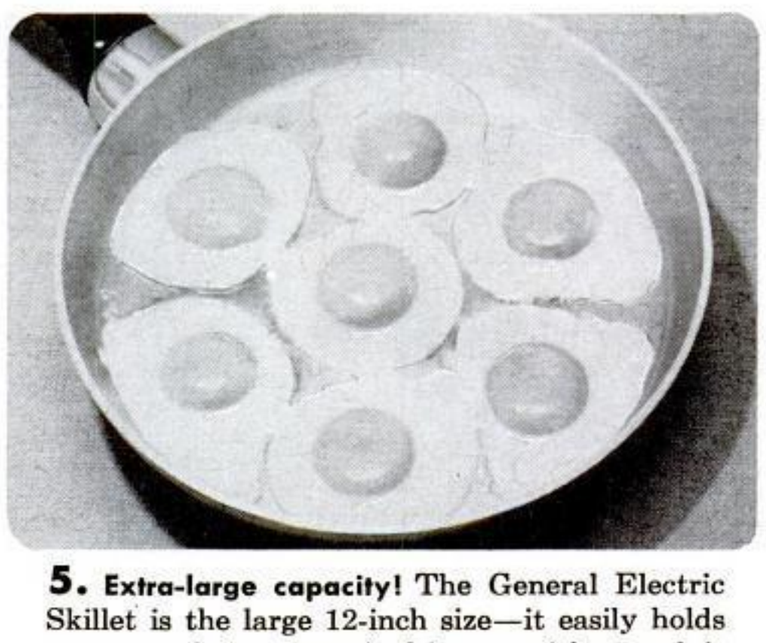
2. Stove burners are different—heat builds up and up, unless you keep adjusting. The skillet gives *better results without constant watching. Food tastes better, too.* For now we know that—like cakes and roasts—*every* food has a "just-right" temperature, listed on the skillet handle.



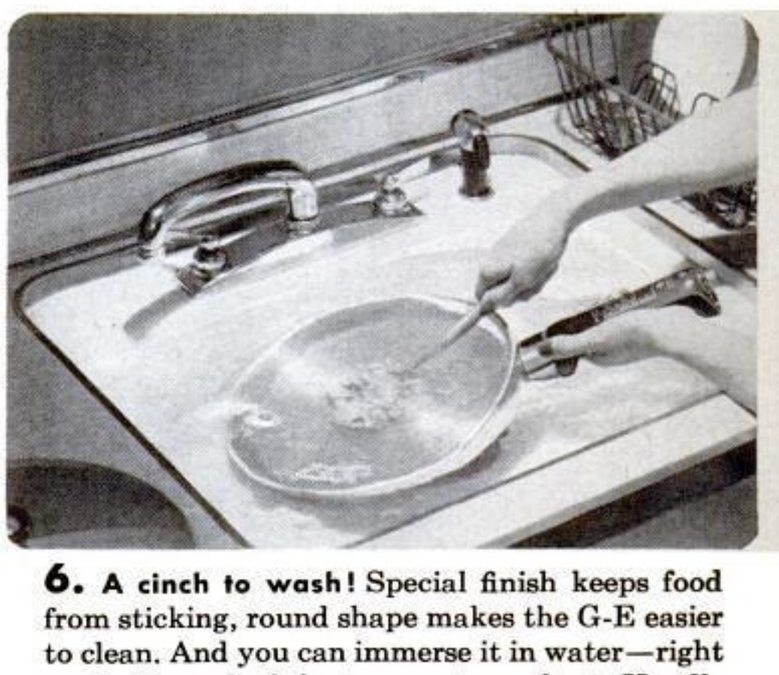
3. And everything you fry at recommended temperatures will be digestible! It is only when fat gets too hot—begins to smoke—that it becomes indigestible. The G-E Skillet works at temperatures well below this point . . . yet food fries light and crisp—no sogginess.



4. You'll use it too for delicious stews, pot roasts, upside-down cakes, casseroles. Just use a standard 12-inch cover or get ours—only $2.00* extra. This skillet is handy also for keeping food warm between servings. Take it right to the table—it's lightweight, has a comfortable handle.



5. Extra-large capacity! The General Electric Skillet is the large 12-inch size—it easily holds seven good-size eggs. And because it's *round*, it lets you cook *more* chops, chicken or other such irregularly shaped foods. More than ample for complete one-dish family meals.



6. A cinch to wash! Special finish keeps food from sticking, round shape makes the G-E easier to clean. And you can immerse it in water—right up to the end of the temperature chart. Handle hooks over dishpan or sink. Visit your G-E dealer this week—enjoy easier cooking, perfect food.

Progress Is Our Most Important Product

GENERAL ELECTRIC

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Settle visiting plans before you leave. Let out-of-town family and friends know how you're coming, when you'll arrive. You'll enjoy your trip more knowing they'll be home. Your welcome will be all the warmer because you're expected.



Telephone ahead if you're going to be delayed. Or, if you've forgotten to settle something, telephone back home. It's easy to do. For wherever you go these days—and however you travel—you'll find there's a telephone near at hand.

Your telephone will help you have more fun this summer



Make your reservations in advance by telephone. Whether you're heading for a hotel or motel, you'll get the accommodations you want, avoid slip-ups. Telephone, too, to make other travel arrangements, to rent boats or camping facilities.

LONG DISTANCE RATES ARE LOW

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Philadelphia to Boston	70¢
Cincinnati to Washington, D.C. .	85¢
Cleveland to Minneapolis	$1.10
St. Louis to Grand Canyon, Ariz. .	$1.50

These are the Station-to-Station rates for the first three minutes, after 6 o'clock every night and all day Sunday. All calls are subject to the 10% federal excise tax—not included above.

Call by Number. It's Twice as Fast.



Keep in touch by telephone with family and friends while you're away. It's such a personal, satisfying way to catch up on all the news . . . to put your mind at ease. And it costs so little. Isn't there someone you'd like to call right now?

BELL TELEPHONE SYSTEM

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Copr. 1956 by Weco Products Co.

Time's up for 6,252,941 Germ-Fighters

(or thereabouts)

For about 6 million people it has been four months or more now since they started using the new Dr. West's Germ-Fighter toothbrush.

If you are one of them you have a handy means of telling when time's up for the unique anti-bacterial properties which this brush possesses. Remember that little white tab that came with the brush? We hope you used it to write down the date on which you would need a new Germ-Fighter. For remember, this brush *stays actively antiseptic* for up to four months in use. Treated by a special process* it destroys or inhibits all kinds of germs that fall on or hold to it including cold germs, oral infection germs and mouth bacteria.

Isn't that kind of oral protection worth keeping at full effectiveness? Only the new Dr. West's Germ-Fighter gives it to you. So if you bought one about last January, time's up now and you need a new one. If you've never owned one—it's time you did.

THE **ALL NEW**
DR. WEST'S
GERM-FIGHTER
TOOTHBRUSH

*Pats. applied for

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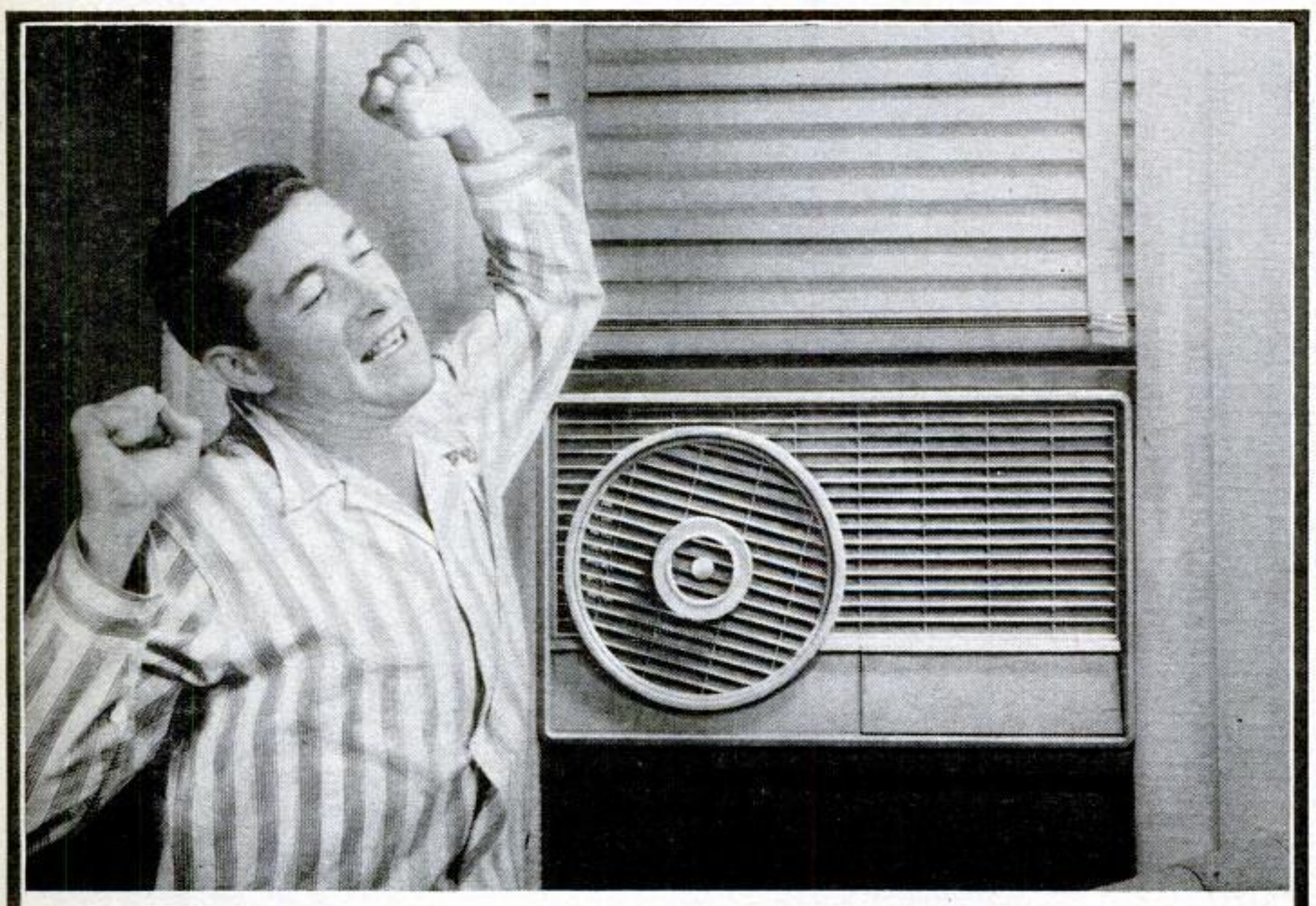
"Are fish more important than folks?"

asks FEDDERS

WORLD'S LARGEST MAKER OF ROOM AIR CONDITIONERS



Foolish question? No, sir! You've probably spent hundreds of dollars on a refrigerator to keep fish cool and fresh, while you swelter in sticky summer heat. Give yourself a break ... see how little it costs to own a Fedders Air Conditioner!



Fedders Exclusive "Weather Wheel" design is the mark of America's best-made air conditioner. Choice of colors, models, and prices for every home and budget. Up to three years to pay!

Summer heat isn't just uncomfortable—it also robs you of vitality, puts an extra burden on your heart and nerves.

Today there's just no reason to put up with the misery of hot weather. For less than the cost of a refrigerator you can own the finest air conditioner made—a Fedders. With a Fedders in your home, you can sleep soundly on the muggiest nights, awake fresh and full of energy. Irritating dust and pollens just never reach you.

Every Fedders unit incorporates the latest improvements in engineering design and research. For example, the new Fedders Super "F" Cooling System is the most powerful and durable ever built in a room air conditioner. Fedders' new big-capacity *Supreme* is the world's first ¾ hp air conditioner to run on normal house current *without special wiring.*

There's a Fedders dealer near you. You'll find his name and address in the yellow pages of your telephone directory.

LOOK FOR THIS FEDDERS TRADEMARK WHEN YOU BUY

FEDDERS

New Fedders 7½ amp ¾ hp *Supreme*

NEEDS NO SPECIAL WIRING!

At last here's the answer to the problem that has prevented millions of Americans from having an air conditioner. It's the new Fedders ¾ hp *Supreme*—the world's first big-capacity air conditioner ever to run on normal house current. With this unit, *no extra wiring is required.*

Plugs in anywhere

A unique design, called the current conserver, is the key to the Fedders *Supreme.* It enables you to plug the unit into any electrical outlet. The new Fedders actually uses less electricity than a toaster!

Uses 40% less electricity

Savings on electricity are considerable. Tests show that the *Supreme* draws up to 40% less current than other ¾ hp air conditioners, yet has equal cooling capacity (and it gives 50% more cooling than ½ hp units)!

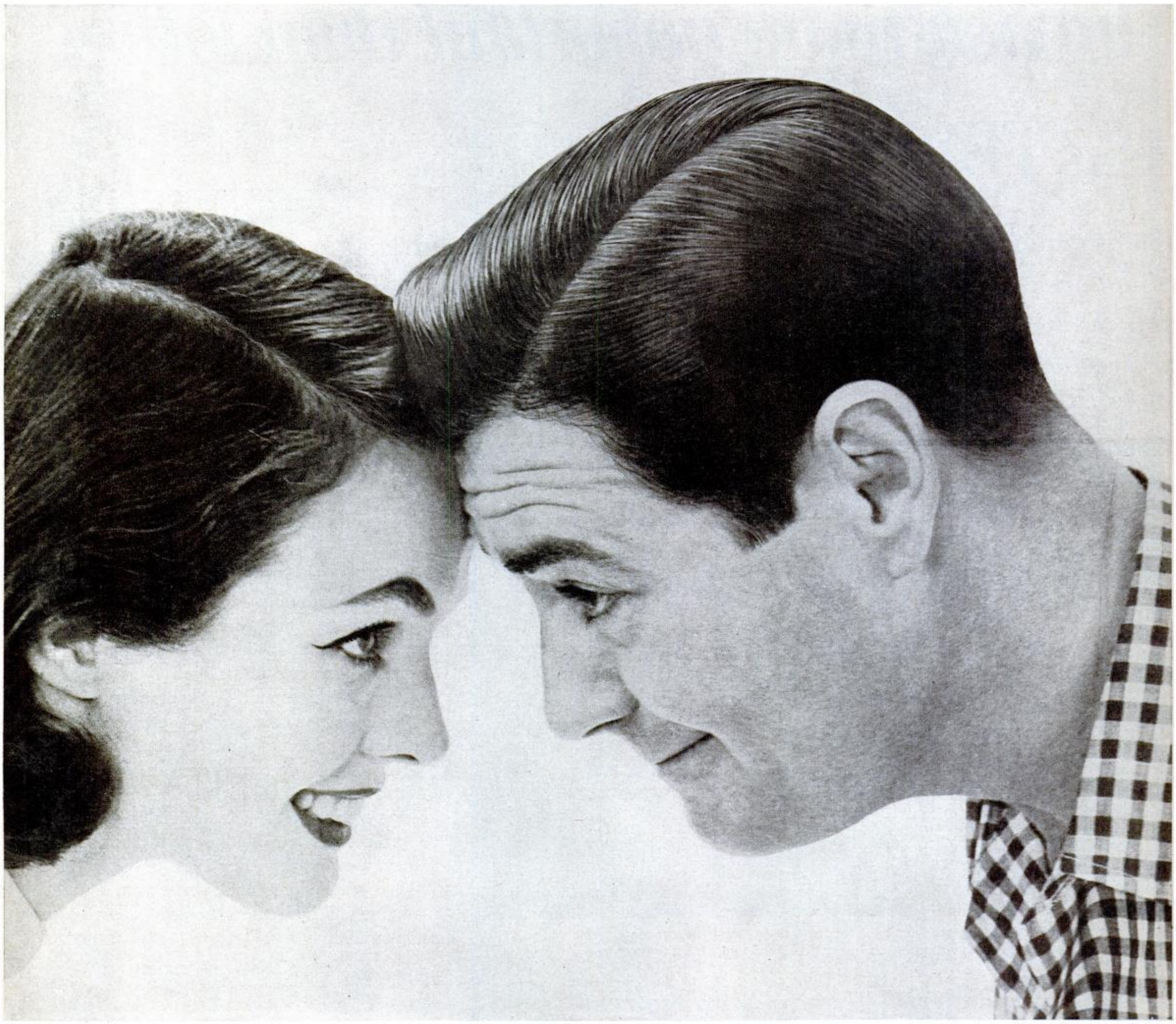
See your Fedders dealer today and ask for a demonstration of the wonderful new ¾ hp *Supreme.* Approved for apartments.

Your **FEDDERS** IS AN INVESTMENT that pays dividends in **Comfort, Health and Vitality** year after year

GUARANTEED BY THE WORLD'S LARGEST MAKER OF ROOM AIR CONDITIONERS

FEDDERS AIR CONDITIONERS

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650,000 wives now buy their husbands' Vitalis . . . and their husbands love them for it.

Why wives buy Vitalis® Hair Tonic for their husbands

Research reveals three fairly elementary domestic facts—

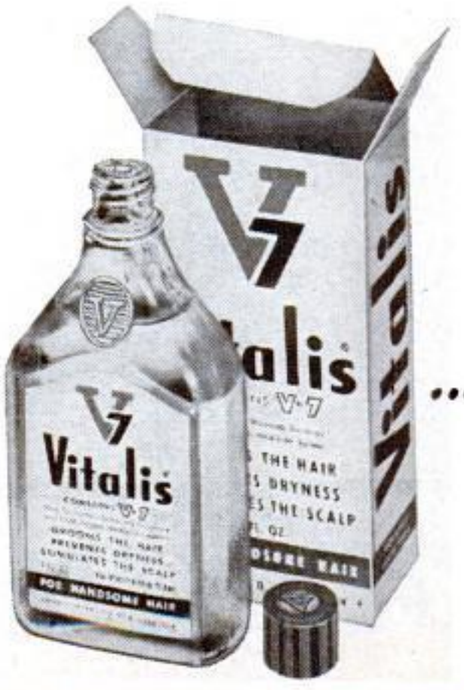
FACT ONE: A woman's most precious asset is not her girlish waistline or her mink jacket. It's her husband.

FACT TWO: Women are interested in an end result. For instance, women do not give a wink about what V-7 is. (V-7 is the new *no-oil* grooming ingredient in Vitalis.) But they like the way Vitalis with V-7 makes a man's hair look impeccable—and not greasy.

FACT THREE: Women are artful. A woman is not above placing a bottle of Vitalis alongside her husband's military brushes and waiting for the results.

Note to men: You don't have to wait for artfulness. Most men either buy Vitalis Hair Tonic themselves or ask their spouses to get it for them.

New greaseless way to keep hair neat all day



...with V-7®

ANOTHER FINE PRODUCT OF BRISTOL-MYERS

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NO LINT FUZZ ON CLOTHES!



Here's proof that the new G-E Filter-Flo Washer washes clothes without lint fuzz! After 11 washings in a washer with *no filter*, the sock at left was flecked with unsightly lint. After 11 washings the Filter-Flo way, a similar sock (right) —washed in an identical washload—showed practically no lint!



5 Mix-or-Match Colors. Choose the G-E Automatic Washer in petal pink, canary yellow (shown), turquoise green, cadet blue or woodtone brown, at $10 additional cost. Also white. About $3.35* weekly. Models for every budget from less than $200 with your old washer. Also see matching G-E Automatic Dryer.

New G-E Filter-Flo® Washer cleans and re-cleans wash water to give you cleaner clothes

Removes lint, sand and soap scum automatically!

Never again put up with linty wash water that leaves lint fuzz on clothes and dulls colors! As you wash, the marvelous new General Electric Filter-Flo Washer circulates and filters the water at the rate of six gallons every minute. Your clothes wash clean, white and bright.

As the washbasket continuously overflows, sand settles out the bottom. Soap scum floats away. Lint is caught in the filter which lets only cleansed, sudsy water flow back into the washbasket.



Look for the G-E Filter-Flo Washing System—today's most talked-about improvement. The full tub of water is filtered five times during one wash cycle without wasting water or detergent. Above, see the lint and loose threads being caught as circulating water flows through the filter. Easy to clean, the filter slips in and out. Also dispenses detergent evenly through your wash.

Big capacity, too. You get over 50% more clothes capacity than in many other automatics. Water Saver Control lets you save water on small loads. 5-year written warranty on transmission. General Electric Company, Appliance Park, Louisville 1, Kentucky.

*After small down payment. See your dealer for his prices and terms. Most models available in Canada.

LIVE BETTER ELECTRICALLY

Progress Is Our Most Important Product

GENERAL ELECTRIC

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MAN'S HIGH NEW

Unearthly impressions of high altitude flight are revealed in color photographs

From the time of Orville Wright, fliers have held privileged access to a private realm where earthlings could seldom follow. In the last decade this flier's domain has expanded in so many dimensions of height and speed, space and time that it almost becomes a new universe just barely bound to earth—a universe brilliantly revealed in Howard Sochurek's photographs.

The new vastnesses opened up when jet aircraft were built to fly above 50,000 feet and beyond the speed of sound. To enter these regions the human pilot must match the mechanical capacities of his aircraft, and this demands an enormous exercise of concentration, a constant cross-check to make certain that the forces at his command do not break loose and destroy them both. At best, he must endure a perilous moment in take-off when the jet, slow to gather power, poises delicately between flight and crash. Nor does altitude bring ease, for he must deal with speeds which compound navigational error and engines which gulp fuel so fast that error is intolerable. With all else there is fear, which a pilot calls "an old companion

Photographed for LIFE by HOWARD SOCHUREK

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PINK IN THE SUNSET, VAPOR TRAILS TRACE THE RECEDING FLIGHT PATH

REALM

of sights that a groundling never sees

in the air." The reward waits up on top. Bound in a strange regalia—oxygen to force-feed his lungs, a pressure suit to protect his body—the flier reaches altitude. Here the sun paints the vapors of his passage and joins with other elements to show him sights never seen on earth. He is caught in exultation so great that fear evaporates in delight. Here, says a flier, is "a big sky to throw back your head in." Now he is in "strange unmortal space"—these words are Lindbergh's —"crowded with beauty, pierced with danger."

IN THE COCKPIT, PILOT FACES HIS WEIRD IMAGE MIRRORED IN CANOPY →



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HEAD DOWN over Arizona,
Air Force instructor
rolls a trainer, leaving
the state's highest point,
12,655-foot Humphreys Peak,
to hold up the rim of the world.

STEEP BANK tilts farms
and a dry creek on the bias.
To take these rare pictures,
Sochurek fixed his camera
facing the pilot and sat
backward in the front seat.



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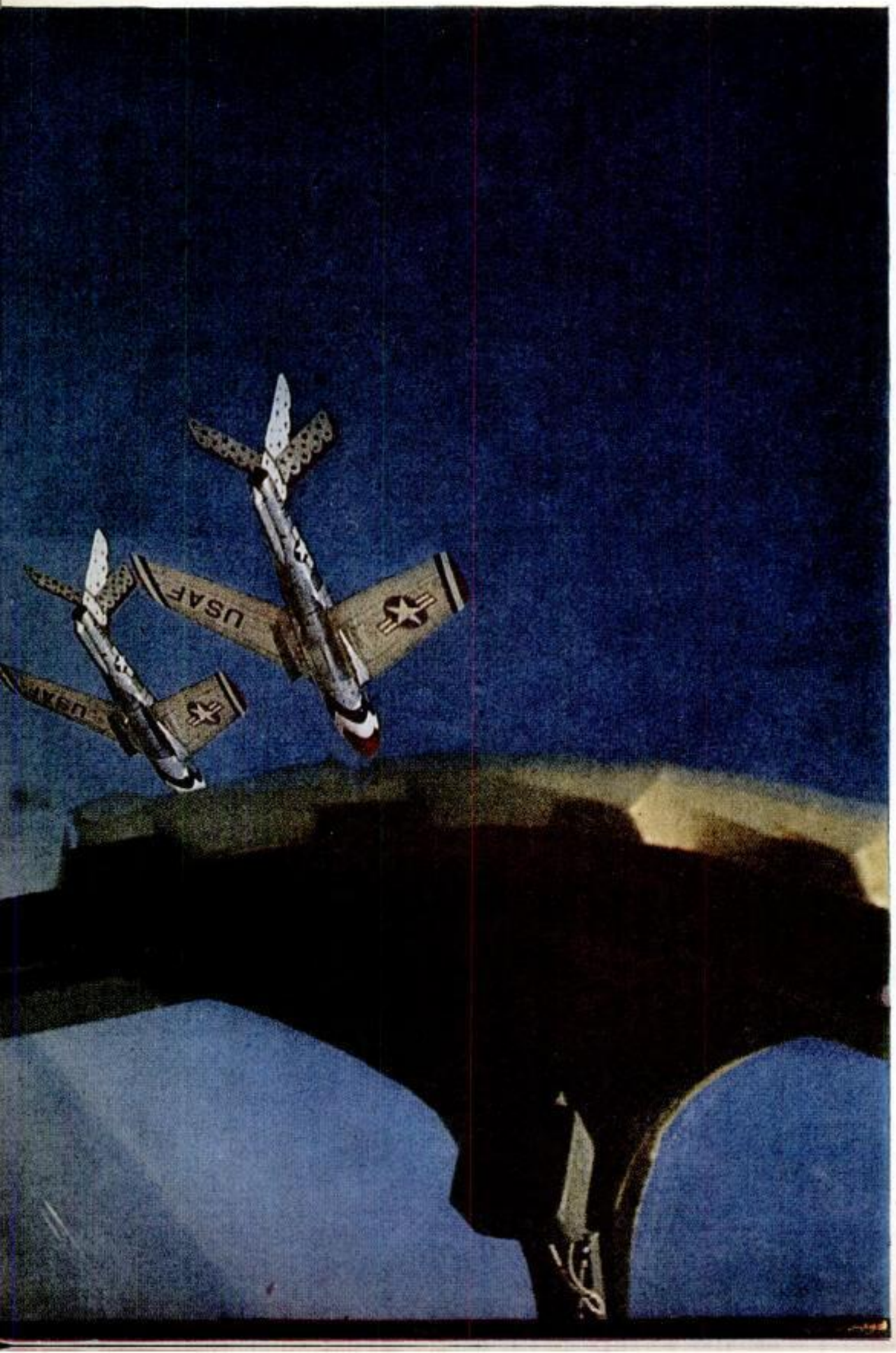
WORLD UPSET hangs
lopsided overhead,
roughly manhandled by the pilot.
To an aerial acrobat, this is
the proper state of things.
Right side up is the way he is.

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THE THUNDERBIRDS (*left*) are Air Force aerobats who use their leader, not the horizon, as a guide. At top, the camera plane flies "the slot" under their tails. At bottom, the fliers almost put wingtips in each other's pockets.



VAPOR TRAILS are unpredictably brewed when height joins with humidity, temperature and exhaust to compound a cloud. Here three B-47 bombers, pulling up above another, lay a many-laned highway in the sky.

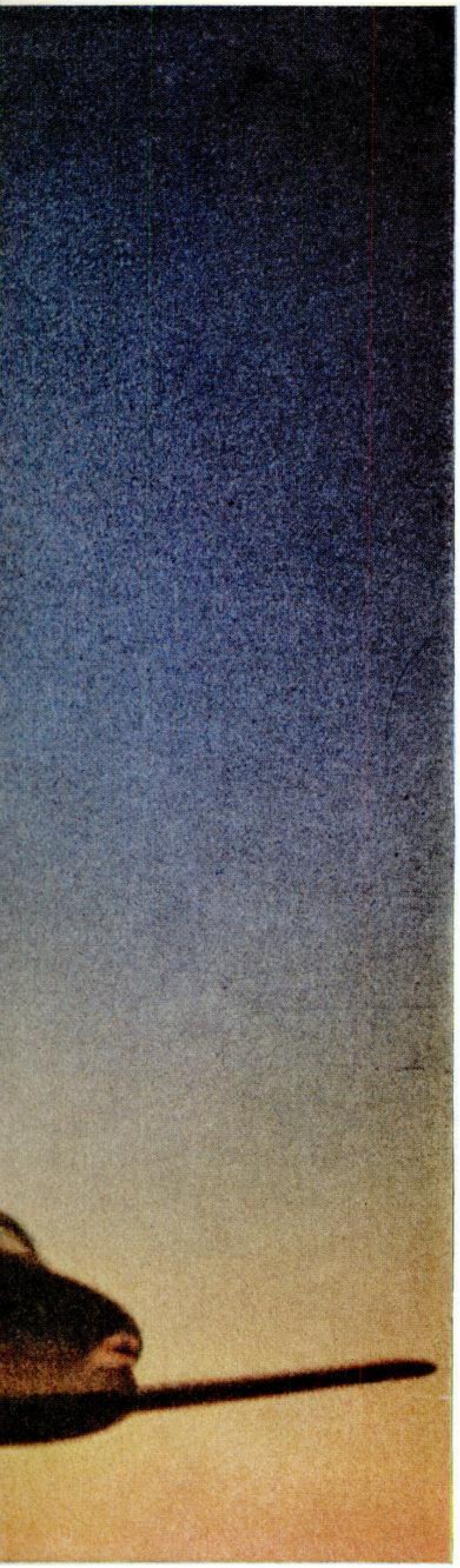
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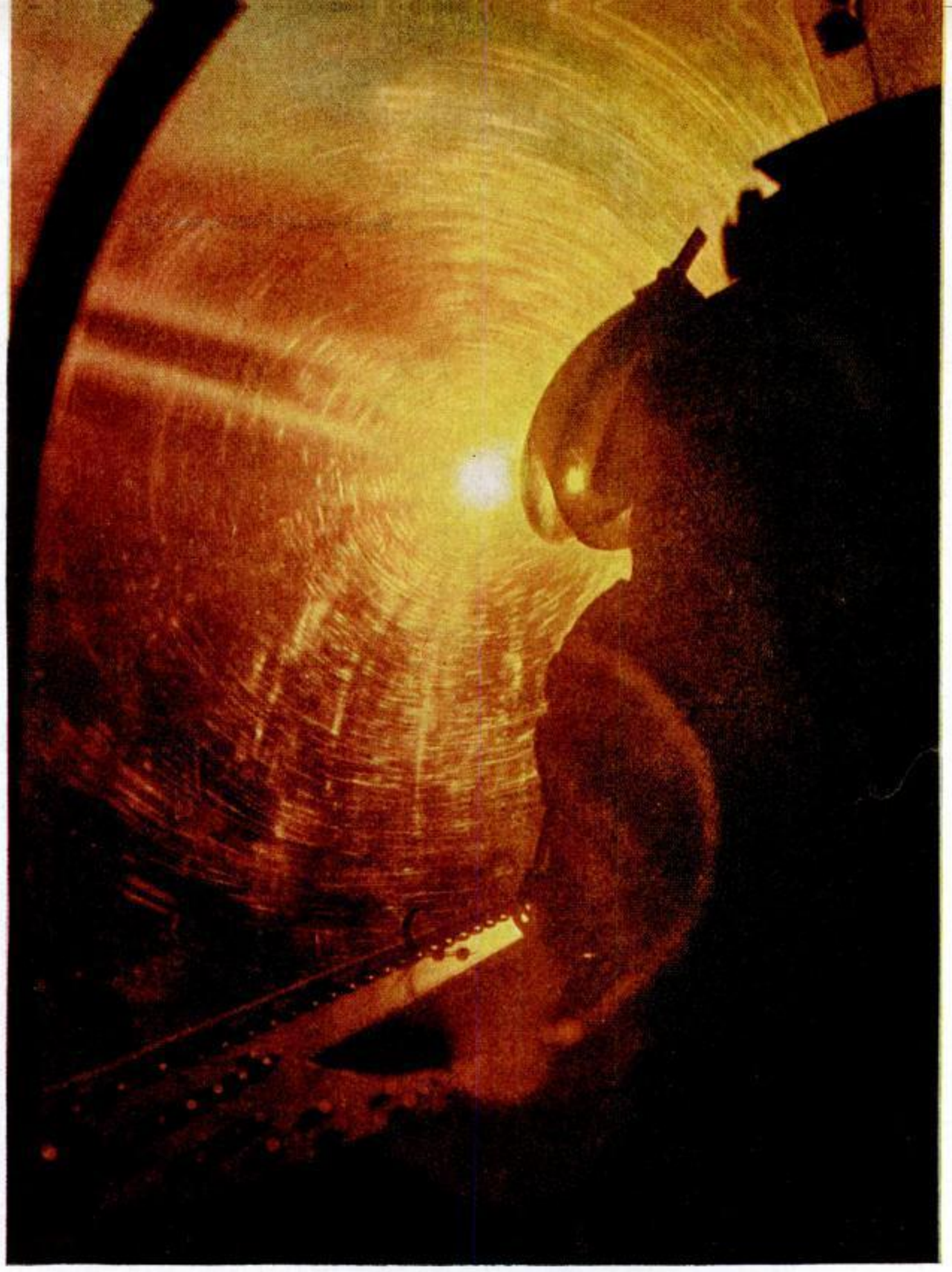
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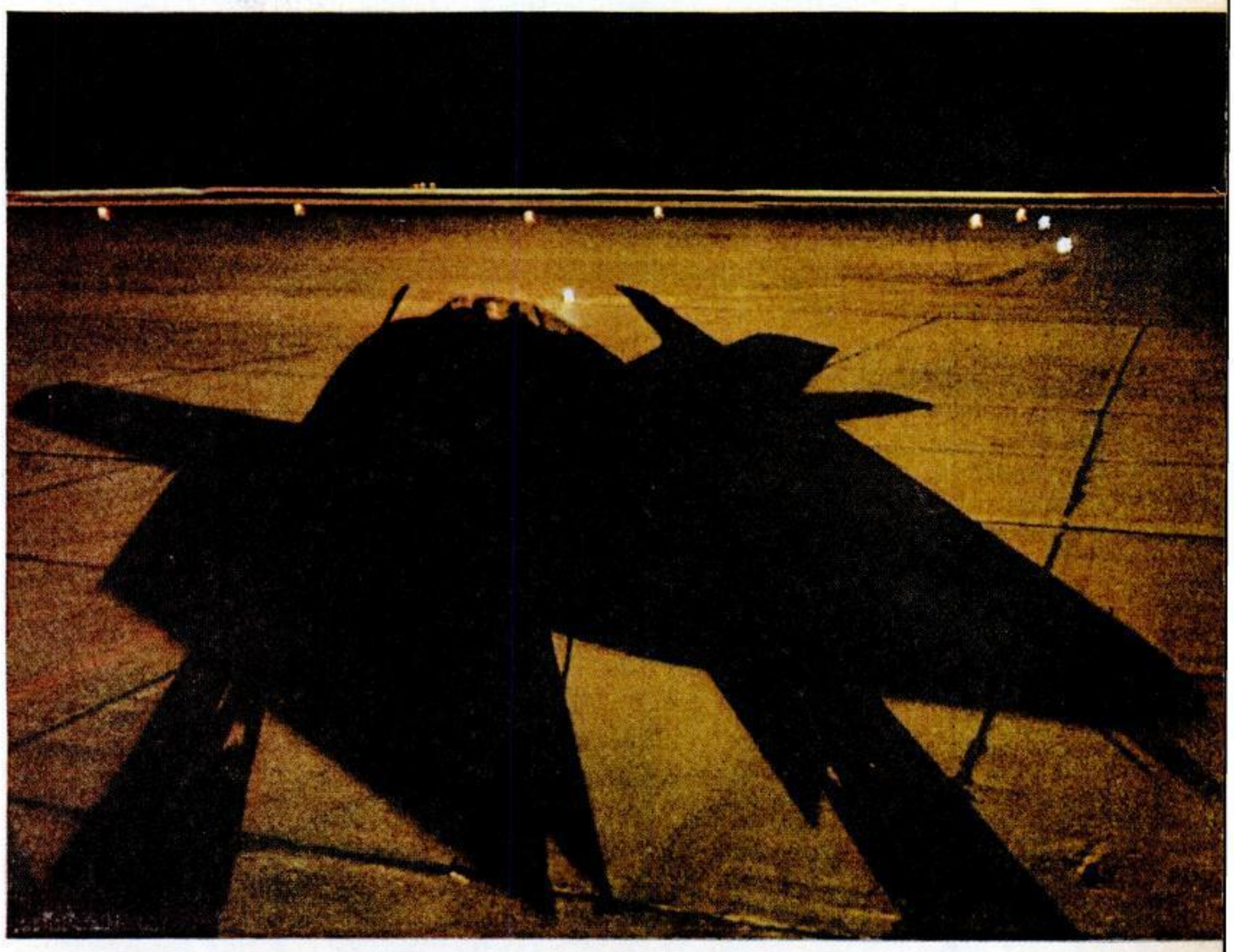
FULL THROTTLE, flying a tight and level V at 35,000 feet, three F-86Ds go howling into the sunset. Their afterburners, gulping fuel at hundreds of pounds a minute and burning it in the tailpipe's white heat, blaze with their own suns.

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ARMORED for flight, the pilot of a modern jet surveys the sunset splintering on the scratched bubble which is his office. In his Martian rig, he seems all goggles above, oxygen mask below, scarcely man at all.



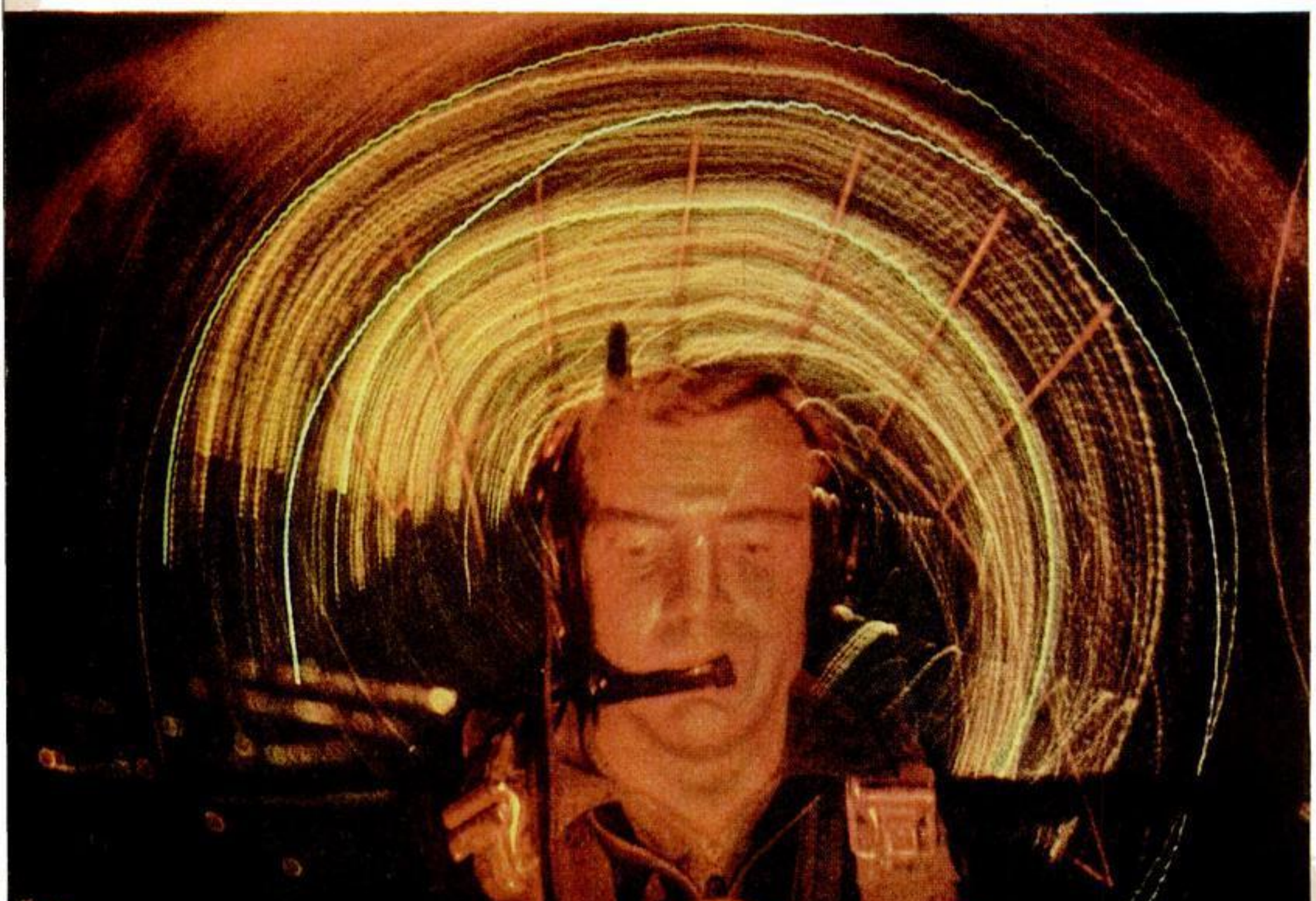
EARTHBOUND, a trainer's shadow, cast by another plane's landing lights, reaches for the runway and the bright streak of a third plane taking the air.

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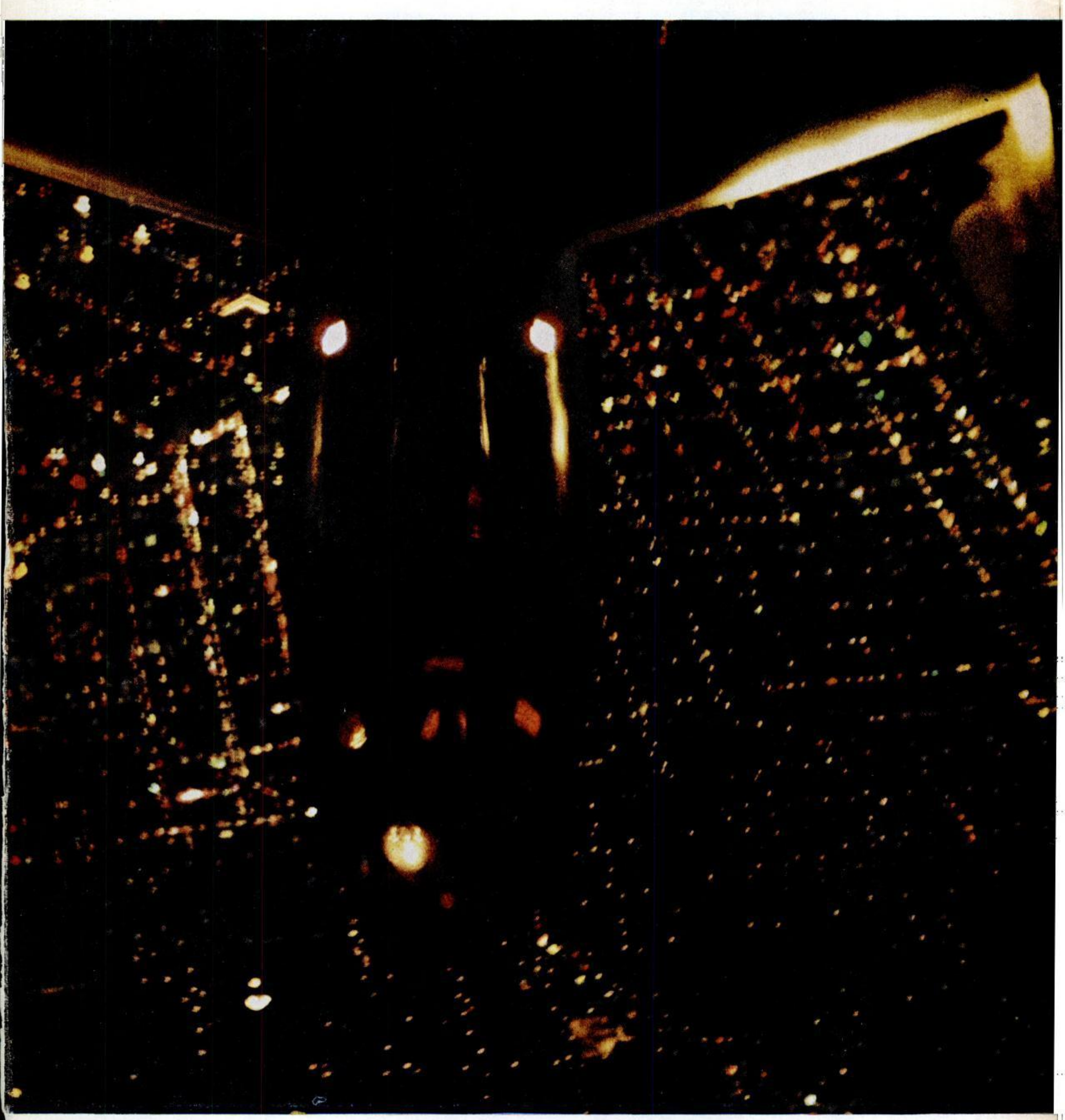
DARING THE STORM, a Martin bomber breaks out
for brief moments, 8,000 feet above a streak of road, shining
silver in the rain. Shaking off one cloud's turbulence,
ready for another, the bomber's tail flicks a vagrant shaft of sun.



SWIRLED IN COLOR and crowned
by antenna raying the canopy, a pilot
rolls as he climbs, winding his head
in a turban of lights from a city below.



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SUPERIMPOSED ON A CITY, a B-47 prowls the night above the patterned glow of San Francisco. Coming up under the camera in the tail of an aerial tanker, the bomber is ready for refueling, floodlit and with the open fuel port in its nose alight.

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THE LAGGARD SUN, playing tricks with time and space, still rides the sky on shimmering fuselages. It is still light at 40,000 feet, but at sunset 20 minutes ago the sun forsook the earth and left Los Angeles to light up for the night.

THE AMBITIOUS MOON sometimes comes early to push the sun aside. Here as the sun still lights the mountains 30,000 feet below, F-86Ds hustle home in the moon's ghostly radiance, white and red lights bright against the coming dark.

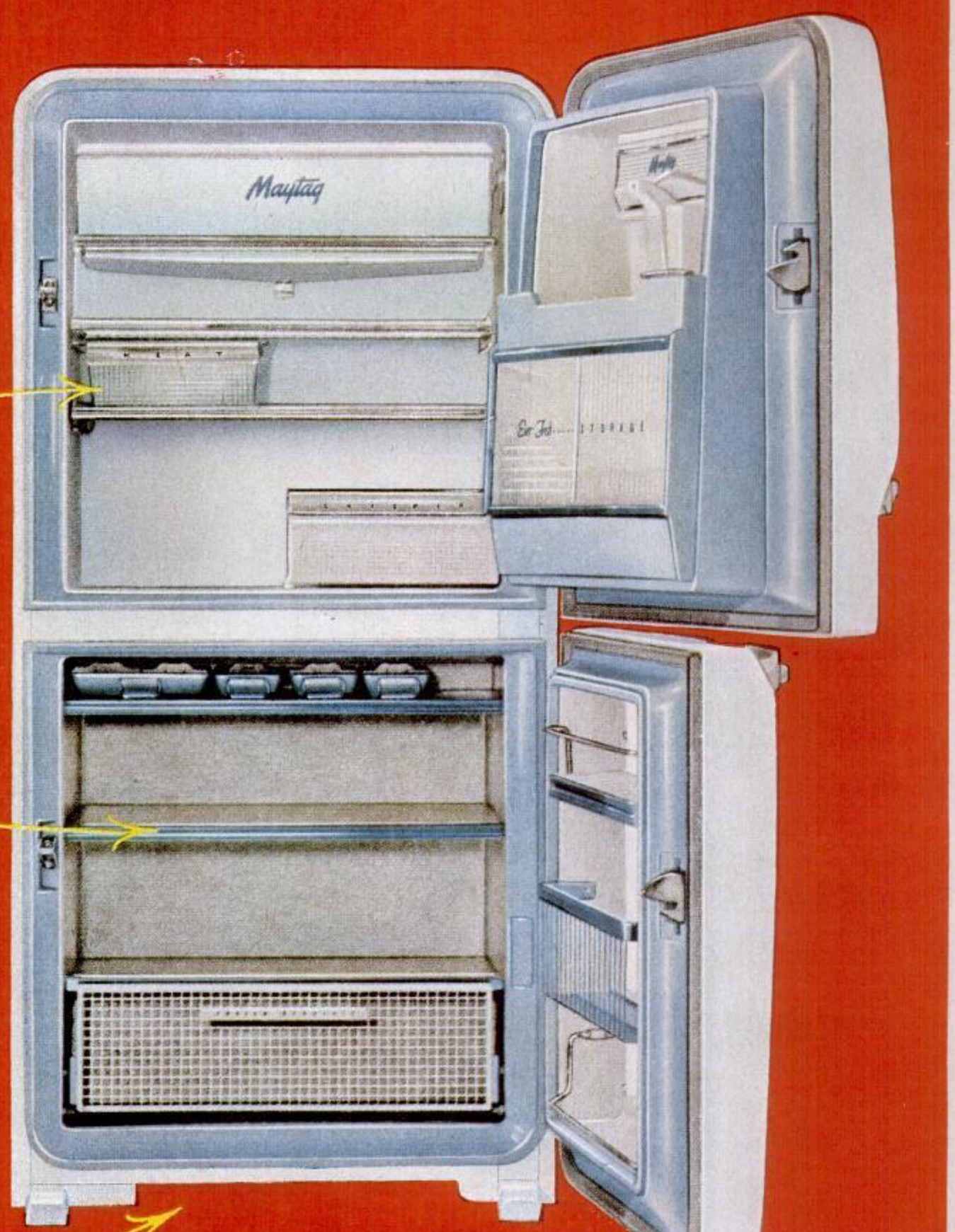
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a
full-size
REFRIGERATOR
9.2 cu. ft.

a
full-size
FREEZER
8.5 cu. ft.

in the
floor space
of the
refrigerator
alone
32×32 in.



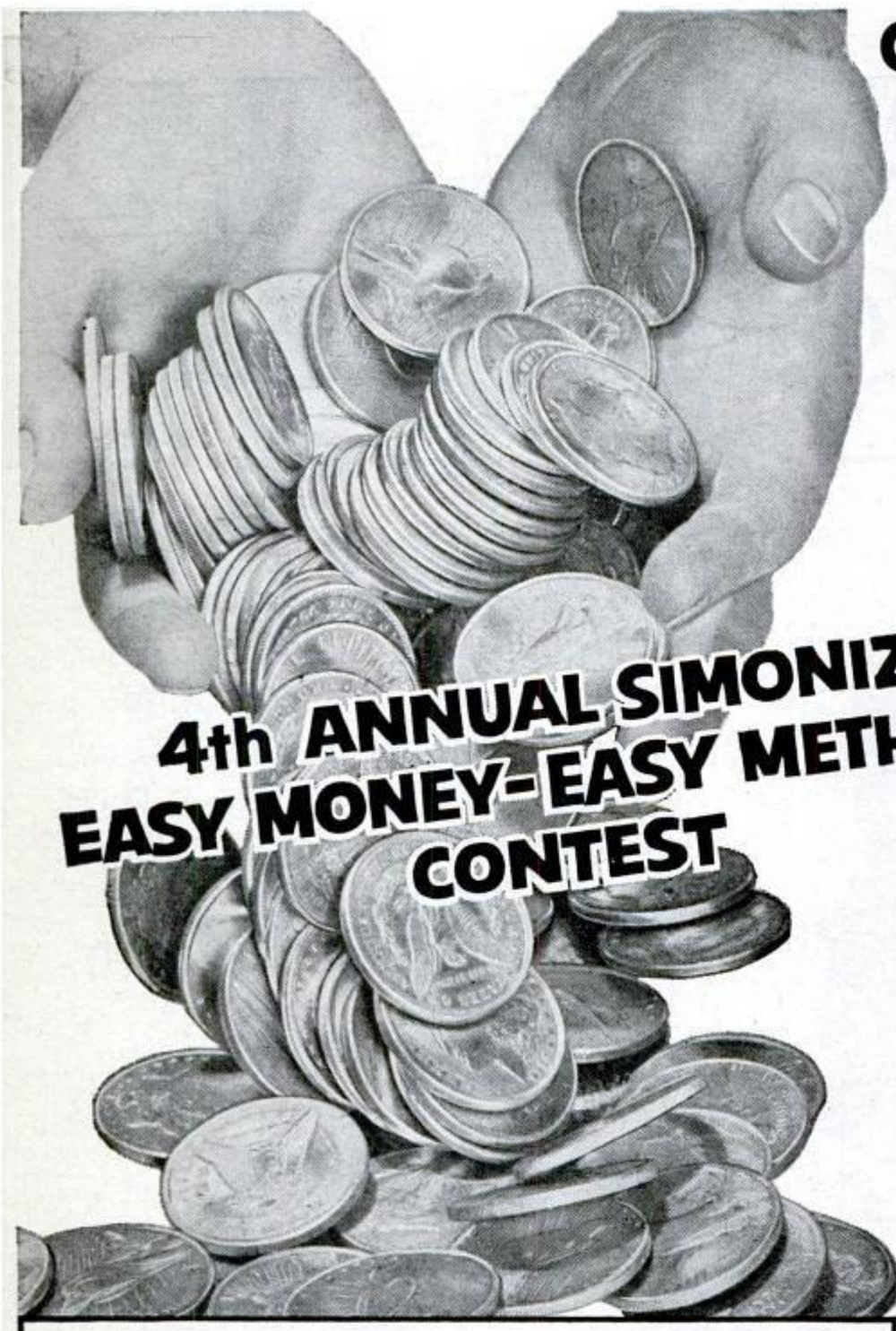
NEW MAYTAG DOUBLE DECKER



All this in one space-saving unit: full-size refrigerator has roll-out shelves—automatic defrosting—9 special food compartments with proper temperature in each. Full-size freezer has 5 specialized compartments—sharp-freezes food, keeps it safely at constant 0°. By Maytag, makers of over 10 million home appliances. At your dealer's now. *The Maytag Company, Newton, Iowa.*

WATCH "NAVY LOG," CBS-TV, TUESDAY NIGHTS

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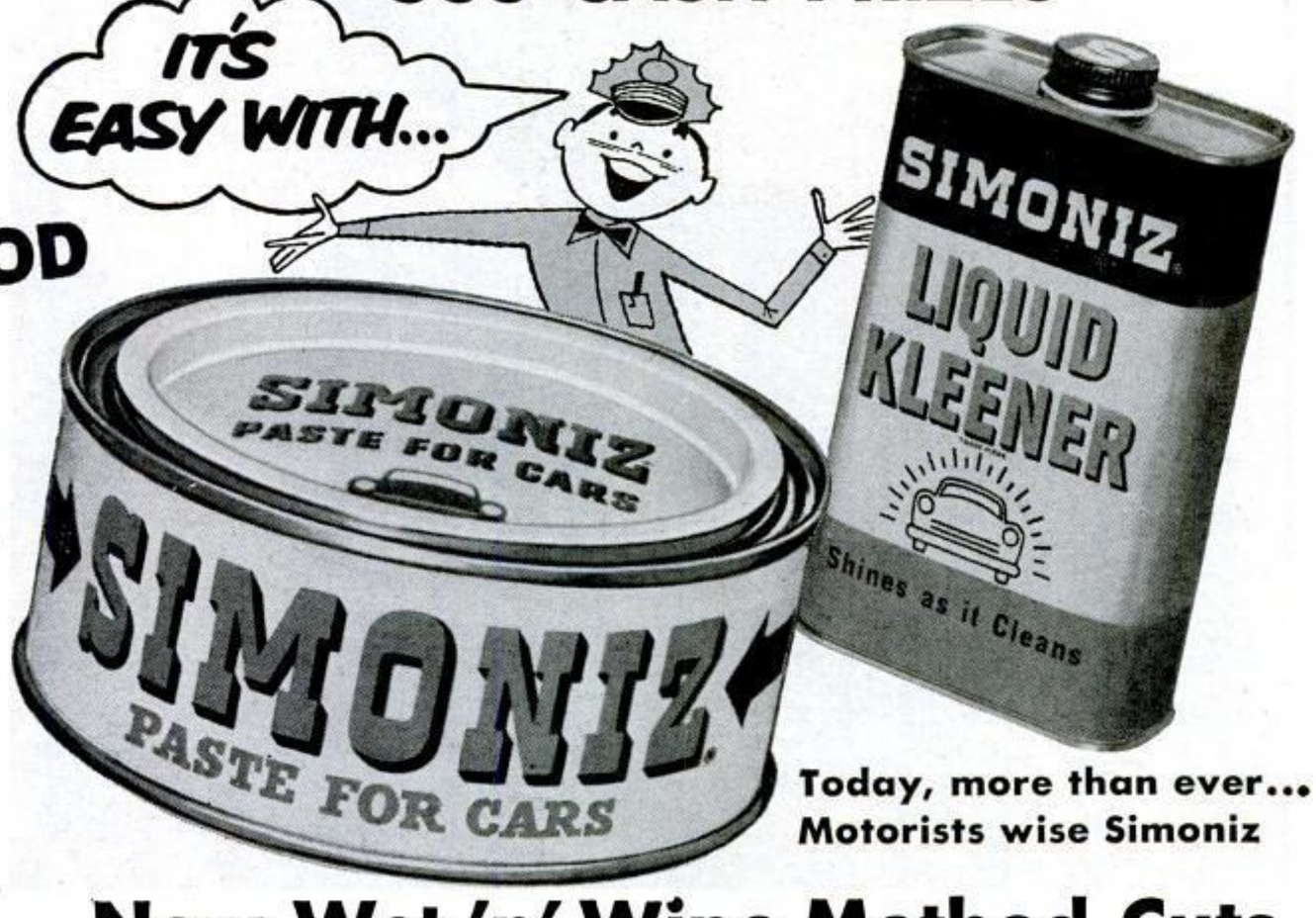
CAR OWNERS! SIMONIZ DEALERS!

Get your share of this

$25,000.00!

568 CASH PRIZES

4th ANNUAL SIMONIZ EASY MONEY-EASY METHOD CONTEST



Today, more than ever... Motorists wise Simoniz

How to SIMONIZ in half the time



CLEAN. First, give quick wipe-off with Simoniz Liquid Kleener. It quickly cleans away dirt and grease—makes the finish smooth as glass. Helps you SIMONIZ your car in half the time!

WET. Apply your SIMONIZ with damp cloth from which water has been squeezed, following directions shown under can top. You can then spread SIMONIZ as easy as soft butter.

WIPE lightly at once with dry cloth before moisture dries. (This is another secret way of cutting SIMONIZING time in half.) Never do more than an area 2 feet x 2 feet square at a time.

After Following Above Directions, Shine to High Lustre.

New Wet 'n' Wipe Method Cuts SIMONIZING Time in Half!

Try it and see! Win big cash prizes!

It's easy! It's fun! Write one of the prize-winning last lines in a limerick about the new, easy SIMONIZ Wet 'n' Wipe Method: This new method takes only half as long to give your car world-famous SIMONIZ protection. SIMONIZ seals out dirt, dust, road scum, traffic film. Brightens today's gay colors. Keeps them from fading. Boosts car value. You can take a six months' vacation from car polishing because SIMONIZ lasts up to six months. Get SIMONIZ PASTE WAX and SIMONIZ LIQUID KLEENER today. Ask your dealer to help you. If you win—he may win, too!

HOW TO WIN

Here's all you do. First use Simoniz Liquid Kleener. Then SIMONIZ your car using the new Wet 'n' Wipe Method. Then, on the entry blank below, or the one you get from your dealer, write what you think makes the best 5th line for this limerick.

The new Simoniz Wet 'n' Wipe way
With Liquid Kleener is easy as play —
Shines your car to perfection
Gives you 6 months' protection

_____

(Last line must rhyme with "way" and "play")

RULES: Last lines will be judged on sincerity and interest by independent judges. Judges' decisions are final. All entries become the property of Simoniz Company and none will be returned. Contest open to residents of continental U. S., its territories and Canada, except employees of Simoniz Company, its advertising agencies and their families. Entries must be postmarked before midnight August 31, 1956. Winners will be notified by mail within 60 days. Duplicate awards will be made in case of ties. Subject to all Federal, state and local regulations.

568 CHANCES TO WIN!

$5000 for the BEST FIFTH LINE
$2000 for the 2nd best line
$1000 each for the 3rd and 4th best lines
$500 each for the next 5 best lines
$100 each for the next 10 best lines
$50 each for the next 20 best lines
$10 each for the next 400 best lines

OVER $7,500 IN CASH TO DEALERS who are now handling these Simoniz products and who help winners write limericks. $5,000 goes to dealer helping the top winner; second prize of $500 to dealer helping write next best line; $125 each to two other dealers; $50 each to 5 other dealers; $25 each to 20 dealers and $10 each to 100 dealers. 129 dealer prizes in all. Help your customers win—you may win, too!

Simoniz Company
P. O. Box 5711, Chicago 77, Ill. Date_____1956

Gentlemen: Here is my entry for the fifth line of the SIMONIZ limerick:

_____
(Write or type your line above)

*NAME*_____

*ADDRESS*_____

*CITY*_____ *ZONE*____ *STATE*_____

If your dealer helped you, fill in his name and address:

*DEALER'S NAME*_____
(from whom you bought Simoniz)

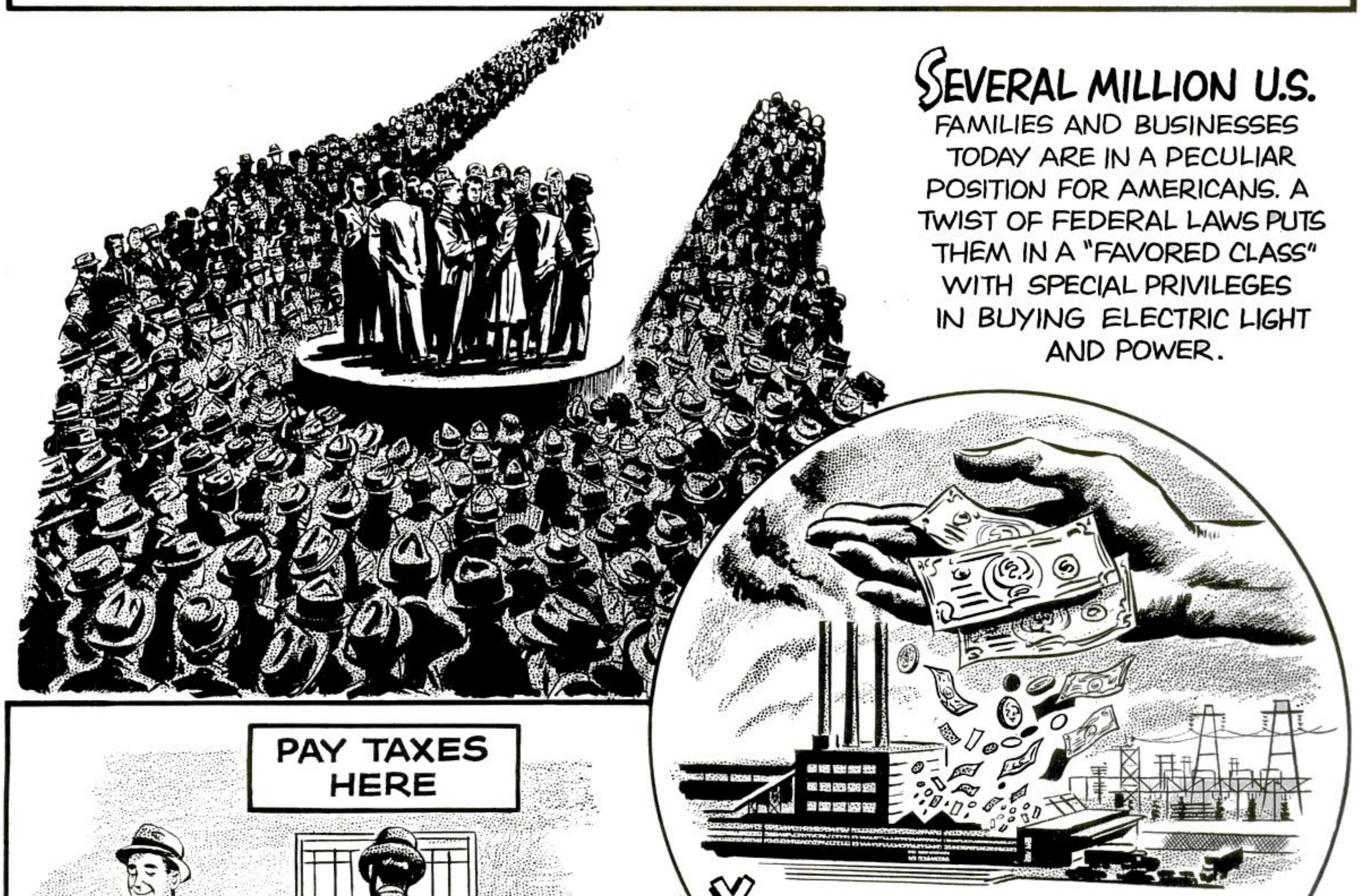
*ADDRESS*_____

For additional entry blanks see your dealer.

All entries must be postmarked on or before AUG. 31, 1956

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HOW FEDERAL LAW CREATES A NEW "PRIVILEGED CLASS"



SEVERAL MILLION U.S. FAMILIES AND BUSINESSES TODAY ARE IN A PECULIAR POSITION FOR AMERICANS. A TWIST OF FEDERAL LAWS PUTS THEM IN A "FAVORED CLASS" WITH SPECIAL PRIVILEGES IN BUYING ELECTRIC LIGHT AND POWER.



FOLKS IN THE "FAVORED CLASS" DON'T PAY TAXES ON THEIR ELECTRIC LIGHT AND POWER AS YOU DO. IN FACT, <u>YOU</u> ARE TAXED <u>MORE</u> TO PAY <u>THEIR</u> SHARE OF FEDERAL, STATE AND LOCAL TAXES.

<u>YOUR</u> TAXES GO TO BUILD THE GOVERNMENT POWER PLANTS THAT SERVE THESE PEOPLE. THEN YOU ARE TAXED FURTHER TO PAY PART OF THEIR ELECTRIC BILLS!

THIS FAVORITISM IS ONE OF THE UNPLEASANT AND LITTLE-KNOWN FACTS ABOUT FEDERAL GOVERNMENT ELECTRIC POWER. AND IT IS A FAR CRY FROM NORMAL AMERICAN STANDARDS OF FAIR PLAY. THAT'S WHY THESE FACTS ARE BROUGHT TO YOU BY <u>*AMERICA'S INDEPENDENT ELECTRIC LIGHT AND POWER COMPANIES.*</u>*

**Names on request from this magazine*

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A WONDERFUL NEW WAY TO HELP CONTROL WEIGHT



THIS FAMILY IS ENJOYING NEW HEALTH, NEW SLIMNESS, NEW BEAUTY BY SWEETENING FOODS AND DRINKS WITH NEW PEARSON LIQUID SAKRIN. READ DETAILS BELOW.

FOR BETTER HEALTH, SLENDER BEAUTY, USE NEW Pearson sakrin LIQUID SWEETENER!

Now control your weight a wonderful new way—simply by sweetening foods and drinks deliciously with new PEARSON SAKRIN Liquid Sweetener—*not a single fattening calorie!* PEARSON SAKRIN is absolutely non-fattening—the only sweetener made with exclusive Daramin, it has NO Calories, NO Sugar, NO Salt, NO Sodium. Sweetens deliciously—*never any bitter after-taste.*

1 DROP equals 1 TEASPOON SUGAR

Each drop of super-concentrated PEARSON LIQUID SAKRIN from the handy squeeze-bottle equals the sweetness of a teaspoon of sugar—saves 16 calories. Use non-fattening PEARSON LIQUID SAKRIN to sweeten coffee, tea, iced drinks and foods. *Save a pound a week* in sweetening calories alone! Start right away. Your satisfaction guaranteed.

PEARSON PHARMACAL CO., INC., LONG ISLAND CITY, N. Y.

SAVE MONEY, TOO. You not only save calories, you also save money (as much as $1 out of every $3 you spend on sugar). 69¢ PEARSON LIQUID SAKRIN equals the sweetness of over 10 pounds of sugar—and saves 18,144 calories. $1.49 size equals the sweetness of over 25 pounds of sugar—and saves 45,359 calories.

Pearson sakrin
LIQUID SWEETENER with exclusive DARAMIN ®

Start controlling your weight now for better health, slender beauty—with wonderful new PEARSON SAKRIN Liquid Sweetener.

REGULAR SIZE 69¢ • SUPER SIZE $1.49
(FREE Weight-Control Booklet in every Pkg.)

Look for the Red-White-and-Blue Squeeze-Bottle at Food Store sugar depts.; in Variety, Dept. and Drug Stores. Slightly higher in Canada.



REPLACEMENT OR REFUND OF MONEY
Guaranteed by Good Housekeeping
IF NOT AS ADVERTISED THEREIN

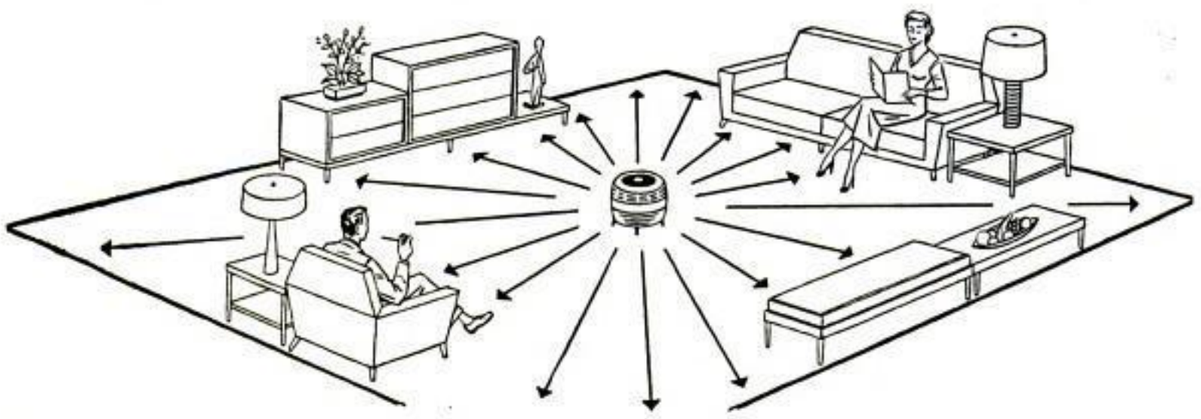
Famous Good Housekeeping Laboratory has studied PEARSON LIQUID SAKRIN thoroughly, and granted the Good Housekeeping Guaranty Seal.

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New Hunter Hassock Fan

cools entire room with complete circle of air



You can circulate cool air all around the room with the quiet, powerful Hunter Hassock Fan. A turn of the recessed 3-speed switch starts refreshing breezes moving outward and upward, without annoying drafts.

You'll find the Hunter Hassock Fan also useful and handy as a low table, TV seat or footstool. Smartly styled and finished in Decorator Beige, it's a beautiful piece of furniture as well as a most efficient fan.

Children and pets can play around this fan with safety . . . thanks to the new Hunter Safety Grille that completely encloses the fan blades.

For a demonstration of the Hunter Hassock Fan, look in your classified phone directory and call or visit your nearest Hunter Fan dealer.

HUNTER FAN AND VENTILATING COMPANY
P. O. Box 3775-A, Memphis 14, Tenn.

Guaranteed 5 Years
Hunter 70th YEAR

HUNTER HASSOCK FAN

ONLY $54.95

FANS FOR EVERY PURPOSE: Window • All-Purpose • High-Velocity • Attic
Oscillating • Ceiling • Exhaust • Industrial • Also Room Air Conditioners

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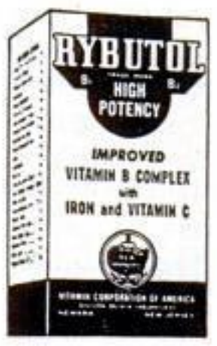
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World-famous makers of Gilbey's Gin bring superior quality to vodka

The vodka craze is becoming the Vodka by Gilbey's craze! The enthusiasm for Vodka by Gilbey's started in one corner of America and swept quickly across the length and breadth of the nation. It's the spirit of '56!

For The House of Gilbey has created a really superior vodka—*smooth... dry... perfectly clear.* And it's completely odorless—*never* an after-breath. Try it—you'll be delighted.

Make the new drink sensations! Send for this booklet. It's FREE (where legal). Write: Vodka by Gilbey's, P.O. Box 238, New York 5, New York.



Vodka by Gilbey's—makes every drink taste better

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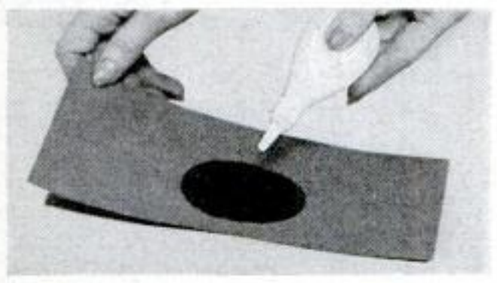
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Just squeeze...it's a breeze

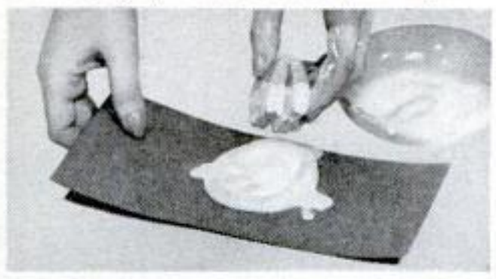
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BLOTTER TEST PROVES LILT'S SUPERIORITY



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Only new Lilt brings you this faster, easier, neater way to wave — thanks to a magic new formula plus a magic new applicator. Together, they give you Squeeze-Bottle Magic!

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Only new Lilt brings you Squeeze-Bottle Magic



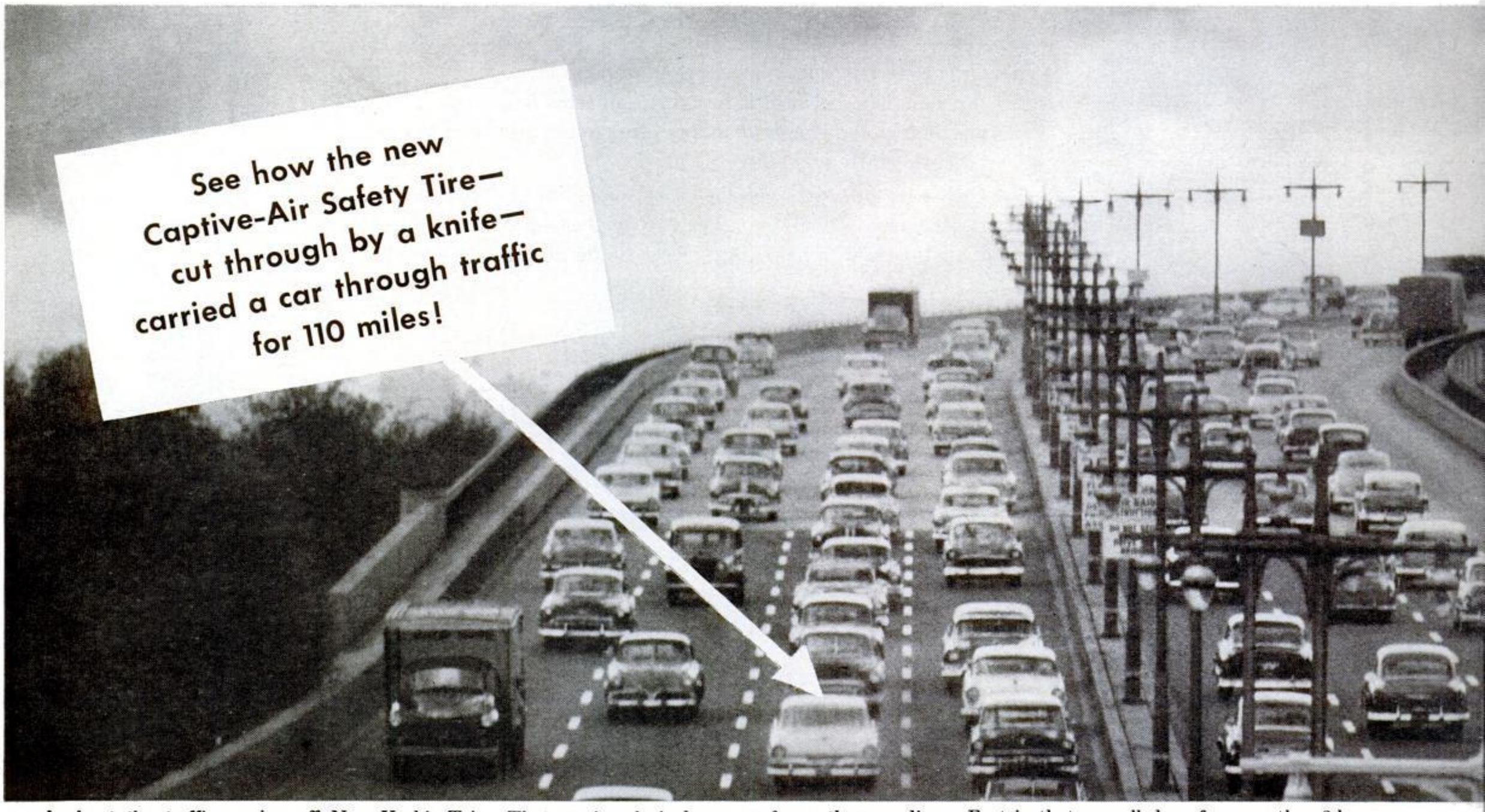
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Another revolutionary new development

New Nylon CAPTIVE-AIR SAFETY

Now...for the first time you don't have to change a "tire within a tire" lets you drive on safely—



Look at the traffic coming off New York's Triborough Bridge. And that car marked by an arrow has a gaping hole in its right front tire. We know—we cut a 2-inch slash right through the side of that tire. Bad spot for a puncture or a blowout? You bet! That car is only inches away from other speeding vehicles. But don't worry! Only the air in the outer chamber escaped when we cut through the tire. The reserve air in the inner chamber supports the car—lets it thread through traffic without danger or delay. Fact is, that car rolled on for more than 3 hours—covered 110 miles! No damage to the "inner tire"—it was completely reusable. No damage to the outer 3-T Nylon tire body other than the cut. Dramatic proof you don't have to change tires on the road!

This amazing new tire development is backed by Goodyear's 22 years and millions of miles of LifeGuard experience

The new Nylon Captive-Air Safety Tire was inspired by Goodyear's famous double air chamber LifeGuard—proved in 22 years of use.

You ride securely and safely on two independent cushions of air—a tire within a tire. If the outer tire is cut, torn or blown out by broken glass, jagged stones or metal, only the air in the outer chamber escapes. The reserve air inside the "inner tire" supports your car. You can drive at legal speeds for 100 miles or more—your insurance that you will reach a convenient tire service station.

You get lifesaving protection whenever you drive—wherever you drive. And this revolutionary new tire eliminates the danger of tire-changing in heavy traffic—eliminates costly towing charges and road repairs.

This new tire also gives you the powerful, live-action traction of the new Twin-Grip tread design; the brawn of 3-T Nylon Cord, triple-tempered by an exclusive process involving precise tension, temperature and time; the resilience of 3-T Nylon for a smoother ride; Grip-Seal construction for extra protection against punctures.

This Nylon Captive-Air Safety Tire is now in limited production. Watch for your Goodyear dealer's announcement. Goodyear, Akron 16, Ohio.



Only Goodyear has the Captive-Air... the safety tire with a built-in spare!

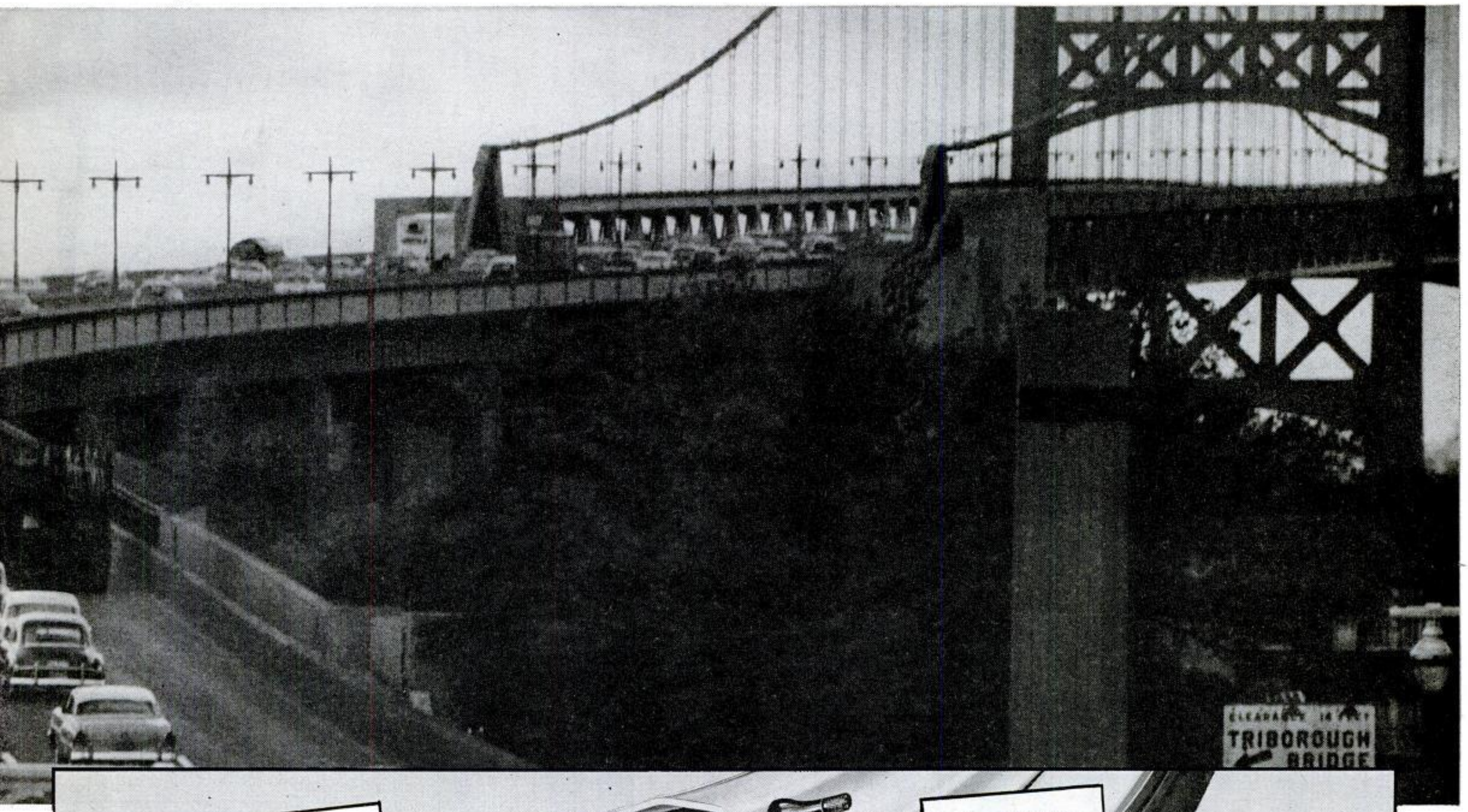
Make your Goodyear dealer's sign your good luck sign—enter the Goodyear $150,000 3-T Safety Sweepstakes now!

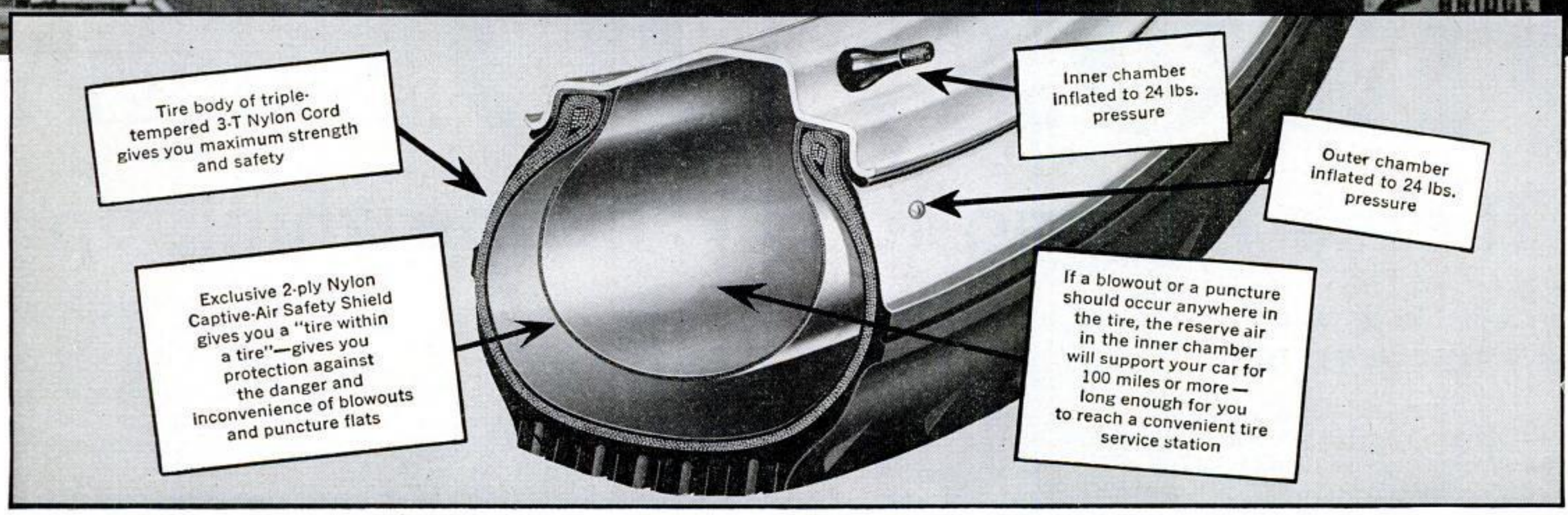
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from Goodyear!

TIRE has a "spare" right inside it!

tires on the road! After a puncture or blowout, at legal speeds—for 100 miles or more!





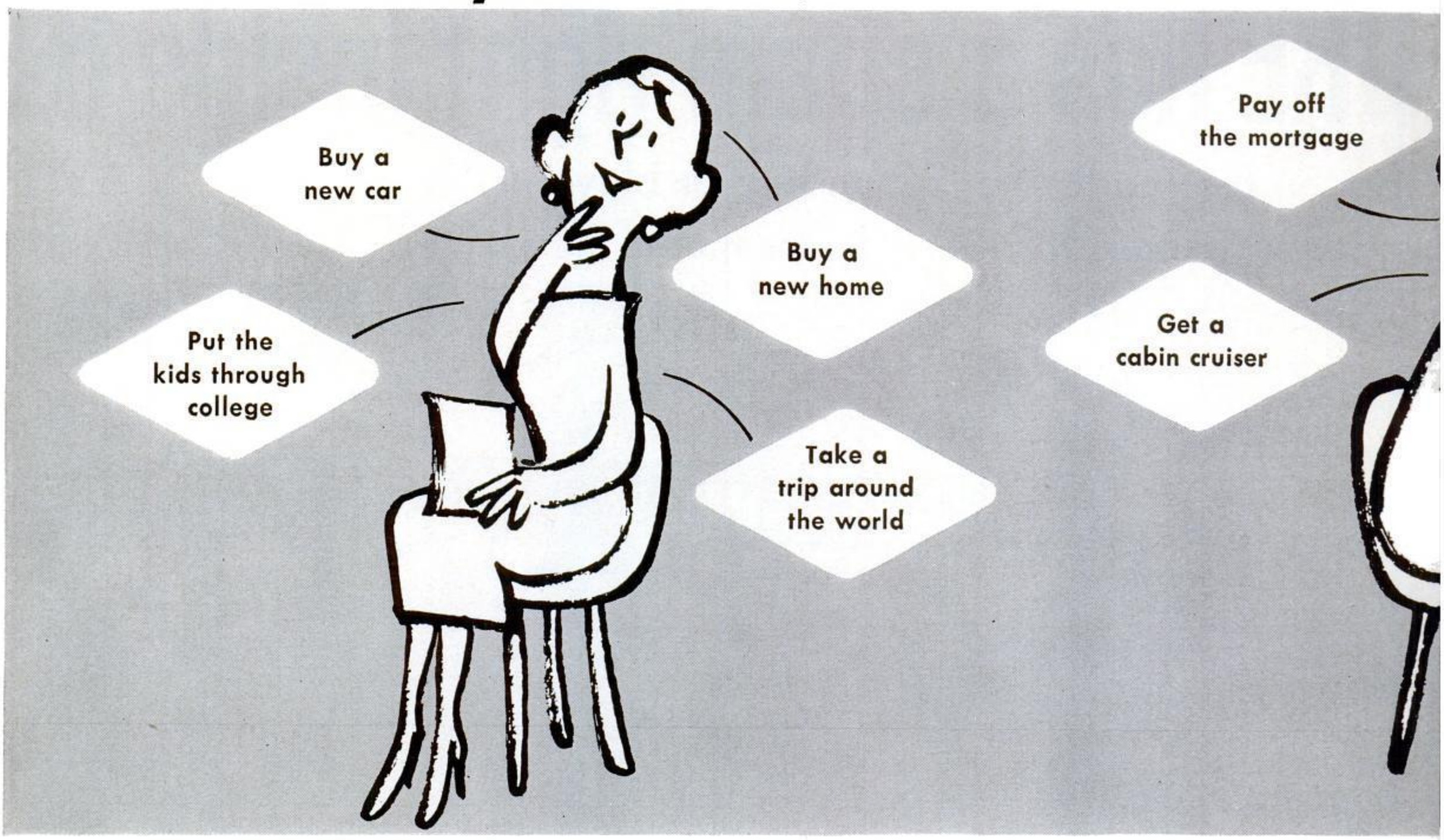
MORE PEOPLE RIDE ON GOODYEAR TIRES THAN ON ANY OTHER KIND!

GOODYEAR

LifeGuard, Captive-Air, T. M.'s, The Goodyear Tire & Rubber Company, Akron, Ohio

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What could you do with $25,000?



You'll never have an easier chance to win

$150,000 3-T SAFETY

There's nothing to buy, rhyme, think up...

Here's the list of prizes:

1st PRIZE—$25,000

574 Additional Prizes—2nd prize—$15,000; 3rd prize—$10,000; 4th prize—$5,000; 5th prize—$2,500. Prizes 6 through 10 will be $1,000 each; prizes 11 through 15 will be $750 each; prizes 16 through 20 will be $500 each; prizes 21 through 25 will be $300 each.

And besides the cash prizes, you'll have 550 chances to win either a set or a pair of famous Goodyear 3-T tubeless whitewall tires: 50 sets of four Double Eagle Nylon tires; 50 sets of four Nylon Custom Super-Cushion tires; 50 sets of four DeLuxe Super-Cushion tires; 100 pairs of Nylon Custom Super-Cushion tires; 300 pairs of DeLuxe Super-Cushion tires.

In all, there are 575 chances to win, and all you have to do is write your name and address on an official entry blank at your Goodyear dealer's! Why not do it right now? Goodyear, Akron 16, Ohio.

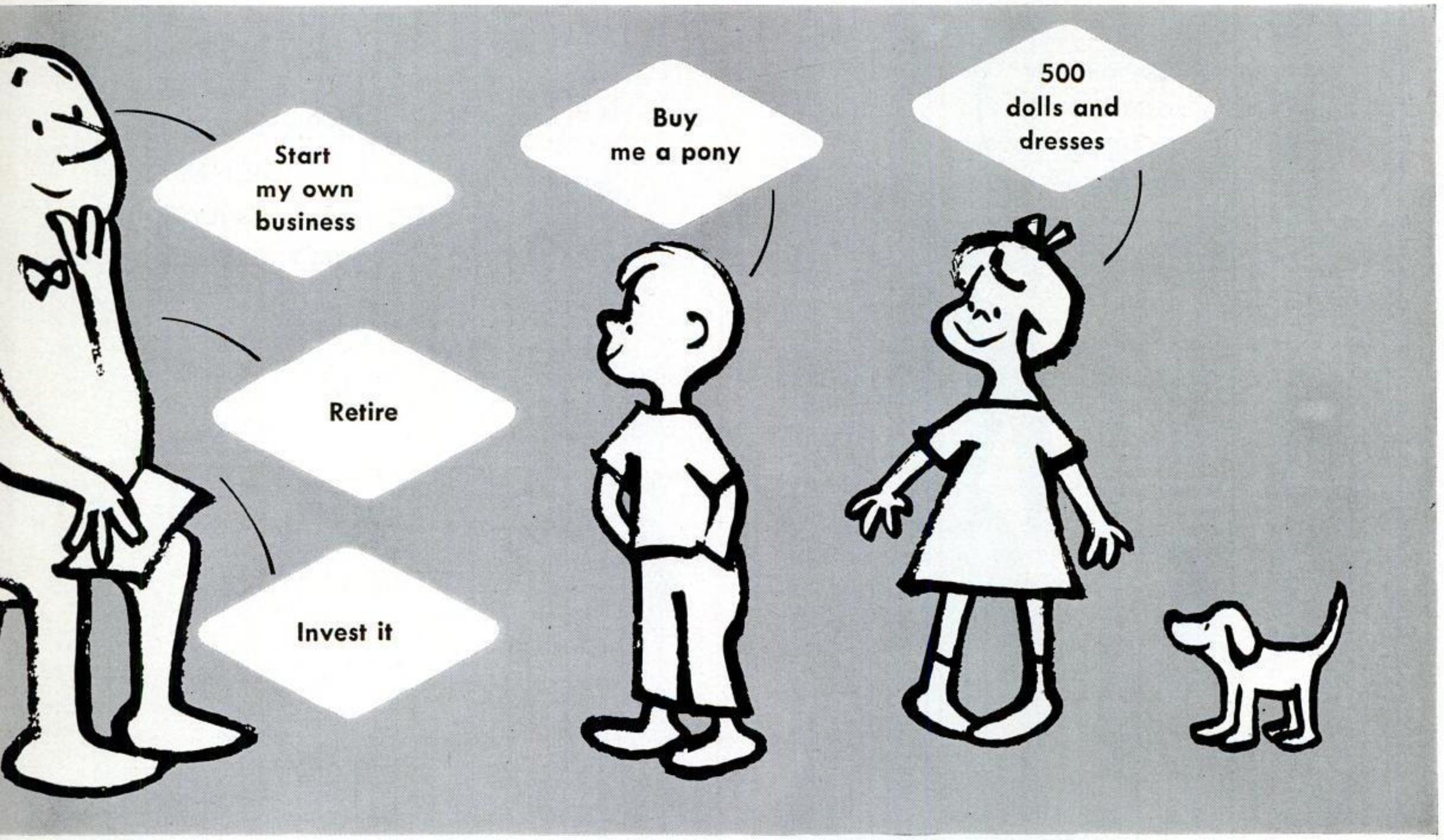
MORE PEOPLE RIDE ON GOODYEAR TIRES THAN ON ANY OTHER KIND!



Fill in your Goodyear Sweepstakes blank at your Goodyear dealer's now!

Make your Goodyear dealer's sign your good luck sign—enter the $150,000 3-T Safety Sweepstakes now!

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$25,000 than by entering Goodyear's

SWEEPSTAKES

nothing to write but your name and address!

Here's all you have to do!

1. Get your official entry blank at your Goodyear dealer's. Sweepstakes opens June 11, and all entries must be in by August 18.

2. Fill in your name and address.

3. Give it to your Goodyear dealer. He will mail it for you. One entry accepted from each person. Entrant must be at least 18 years old.

4. A drawing will be held September 11th by the Reuben H. Donnelley Corp. in Chicago, Ill.

Winners will be promptly notified by mail by their local Goodyear dealers. Winners' names will also be posted at Goodyear dealers' during the week of October 15th.

Hurry! Get your entry in now.

This promotion is subject to Federal, state and local regulations.

This offer is limited to persons 18 years and older living in the continental United States. Employees (and their families) of all tire companies, their subsidiaries, their dealers and dealer employees and their advertising agencies are ineligible.

GOODYEAR

Super-Cushion, Double Eagle, T.M.'s, The Goodyear Tire & Rubber Company, Akron, Ohio

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Anyone offering to share a medicine with a friend does so, of course, with the kindest of intentions. But this practice is risky . . . and the only sensible thing to do is to steer clear of all such offers.

Sometimes you might be tempted to "borrow" medicine. Your friend's symptoms were just like yours and you've been given . . . or think you've been given . . . the same prescription. So why let that left-over medicine go to waste? But, as your doctor will tell you, similar symptoms don't always indicate the same trouble. Joint pains aren't necessarily signs of arthritis, and chest pains do not always mean heart trouble.

Even if two people happen to have the same illness necessitating the use of the same drug, it still would be hazardous to use another's prescription. For drugs come in many strengths and many forms . . . and the prescription that is right for someone else may be wrong for you. Then, too, some drugs lose their effectiveness within a few weeks or months after the original prescription is filled.

So don't let well-meaning friends keep you from getting the full benefit of your doctor's counsel and the medicines he prescribes. Seeking medical advice—and then following it—may well turn out to be one of the really big bargains of your life.

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LIFE
Vol. 40, No. 25 June 18, 1956



AT 8:38 A.M. ON MONDAY, JUNE 4, AT LOS ANGELES AIRPORT, AN ALERT AUDIENCE OF JACK RABBITS ALONG RUNWAY WATCHES A DC-7 TAKE OFF FOR CHICAGO

AS REPORTED LAST WEEK BY PHOTOGRAPHERS FROM COAST TO COAST

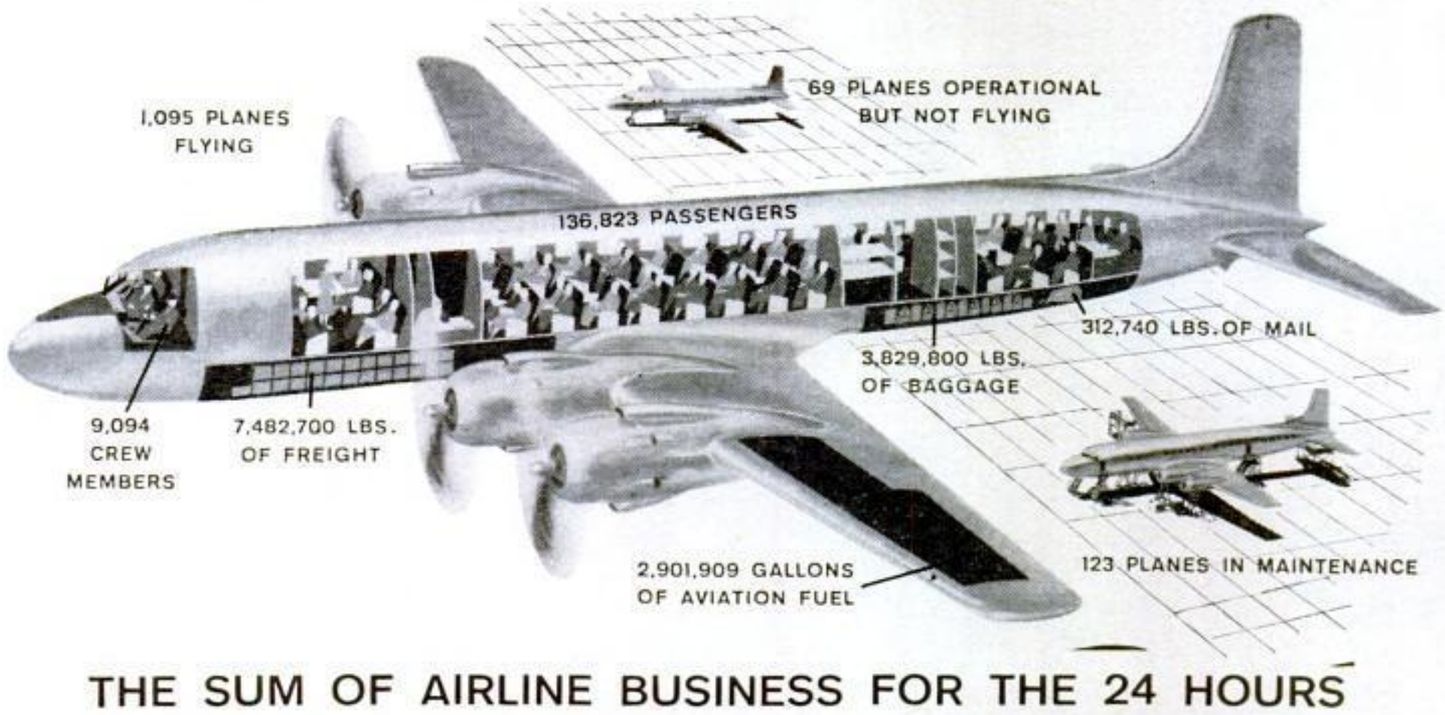
U.S. AIR HAS A BUSY 24 HOURS

In the U.S. air, the weekend of June 3 could be counted as average busy—weekends having become traditional travel rush hours for Americans. The planes carried people off from home or back to it, getting them started on a vacation or on their week's work. But 24 hours of that weekend show how, in just 30 years, the air age has engulfed the U.S. and changed its habits. During this span, from 3 p.m. E.S.T. on Sunday June 3 to 3 p.m. the next day, LIFE stationed photographers at all the major U.S. airports, and some of the smaller ones. From Los Angeles (*above*) to Miami and New York, LIFE found the U.S. using air transport as a part of its daily life—convenient, fast, undramatic to the point of being commonplace.

The planes flew through the day and night, carrying fishermen to Seattle, politicians in and out of Washington and self-reliant young fliers all over the place. Far from the big airports, in remote cattle towns like Greybull, Wyo., the regular daily plane landed to pick up or discharge ranchers, including one who remarked as he started out on his first flight, "I should have worn my spurs."

The airline industry, as a daily scheduled affair, began in the U.S. in 1926 after passage of a federal act turning the air mail business over to the struggling airline operators. That year only 5,782 passengers were carried over domestic air routes totaling 3,715 miles. This year, with passenger fares half as much as in 1926, the airlines will fly 40 million passengers over a growing web of domestic routes which now stretch to more than 62,000 miles. The grand total of airline passenger business has soared so high that domestic airline passenger-miles for 1955—20 million—almost equaled the total passenger mileage of U.S. railroads.

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THE SUM OF AIRLINE BUSINESS FOR THE 24 HOURS

Plane above represents 1,095 scheduled planes which flew during period and shows volume of business handled. Below is a summary of activities in six busiest airports.

LOS ANGELES	DALLAS	CHICAGO
230 ARRIVALS	203 ARRIVALS	400 ARRIVALS
226 DEPARTURES	204 DEPARTURES	400 DEPARTURES
12,666 PASSENGERS	6,809 PASSENGERS	27,338 PASSENGERS
75,400 LBS. OF MAIL	19,200 LBS. OF MAIL	76,129 LBS. OF MAIL
411,899 LBS. OF BAGGAGE	214,100 LBS. OF BAGGAGE	715,840 LBS. OF BAGGAGE
53,216 LBS. OF FREIGHT	90,800 LBS. OF FREIGHT	158,254 LBS. OF FREIGHT

ATLANTA	WASH., D.C.	NEW YORK
148 ARRIVALS	427 ARRIVALS	272 ARRIVALS
149 DEPARTURES	408 DEPARTURES	282 DEPARTURES
9,953 PASSENGERS	22,635 PASSENGERS	18,125 PASSENGERS
13,000 LBS. OF MAIL	19,207 LBS. OF MAIL	33,866 LBS. OF MAIL
226,000 LBS. OF BAGGAGE	375,000 LBS. OF BAGGAGE	456,118 LBS. OF BAGGAGE
8,430 LBS. OF FREIGHT	41,967 LBS. OF FREIGHT	31,274 LBS. OF FREIGHT





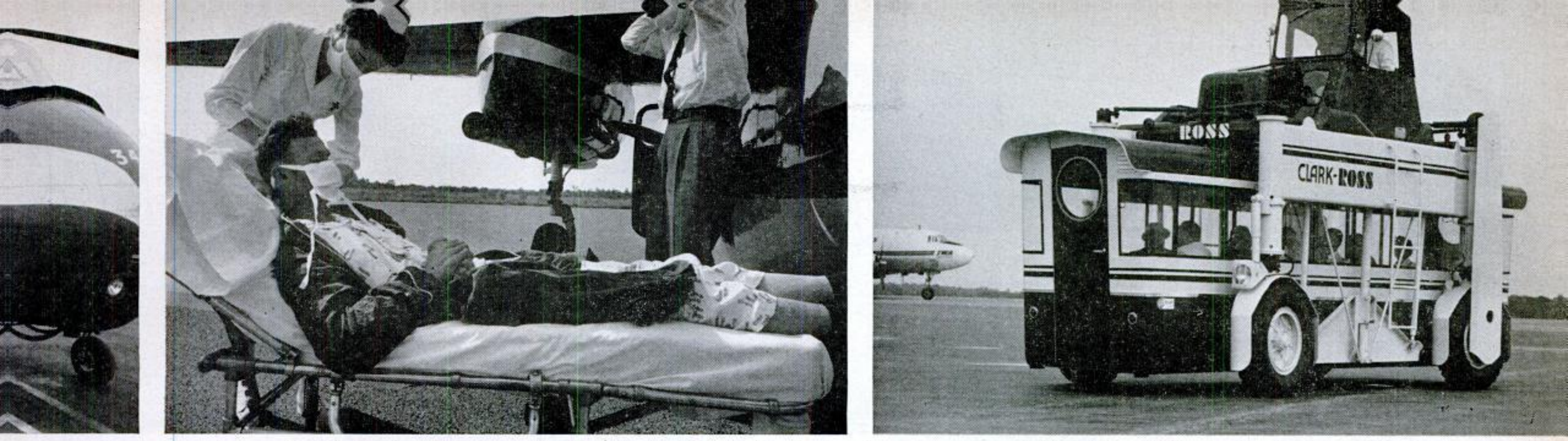
EXTRA SERVICES include helicopter between Los Angeles airport (*above, left*) and outlying towns.



IN MAINTENANCE SHOP in Tulsa, Okla., where American Airlines inspects and overhauls all of its

AIR FAIR at Los Angeles (*left*) attracts Sunday crowds to airport to promote public interest in a bond issue for new facilities. Here citizens line up to inspect planes. Many of them also got free rides.

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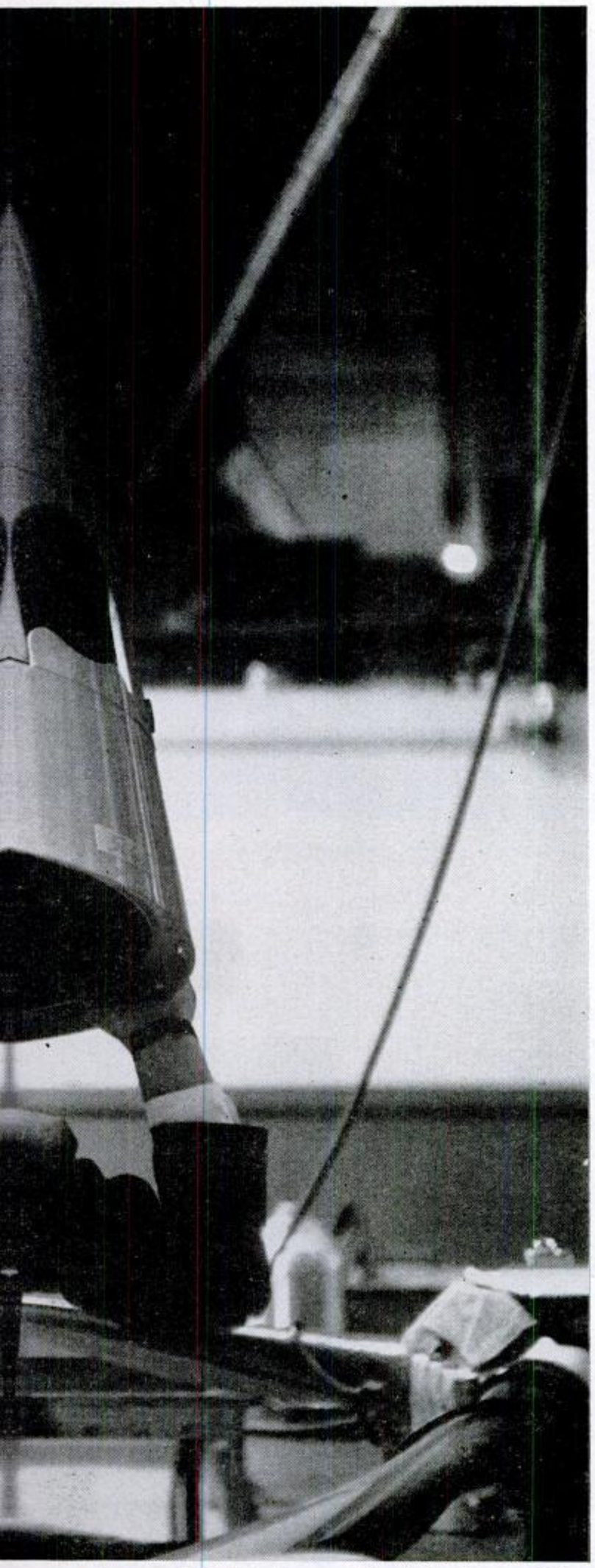
Southern Aero ambulance (*center*) flies from Atlanta. Here nurse and pilot prepare tubercular patient for flight to hospital. At Cleveland a "passenger pod" is being tried out (*above, right*). With it, time and plane fuel could be saved by hauling podful of passengers out and lifting them to door of aircraft.

MEALS AND MAINTENANCE, PODS AND SPINNERS

During the 24 hours in which LIFE photographers documented the hustle and bustle of U.S. commercial aviation, a total of 1,095 planes took off and landed with 136,823 passengers (*charts, opposite page*). Other passengers, not included in the above total, made use of such specialized but thriving offshoots of the air transport business as airborne ambulances and helicopter shuttle services. In several big cities it is now possible to book a flight right through to a small town by taking a regular plane to the nearest large airport and a helicopter the rest of the way.

The great load of business has so crowded airports that most U.S. cities are finding their facilities inadequate to handle the increasing traffic. In Los Angeles last week citizens were asked to vote on a bond issue to provide for a new and larger airport. After trooping out on Sunday for a special air fair to see their present crowded airport (*bottom, opposite page*), they went home and voted for the new one by 488,000 votes to 77,000.

The airlines' job of transporting passengers was not always carried out with complete efficiency, but the passengers—young and old, two-footed, four-footed and winged (*following pages*)—got where they were supposed to get with speed, comfort and convenience that would have seemed miraculous a decade ago.



planes, official checks propeller hub spinner. Maintenance men were busy all through the 24 hours.



A HUNDRED MEALS out of the 1,500 prepared daily in Atlanta kitchen of Dobbs House caterers are assembled dish by dish. Here cooks put together trays of filet mignon dinners for three airlines.

CONTINUED

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HALL (FOREGROUND) CALLS FOR HIS BAGS AT THE WASHINGTON AIRPORT



SENATOR KENNEDY EATS SNACK AT WASHINGTON



MATURE (IN SUNGLASSES)

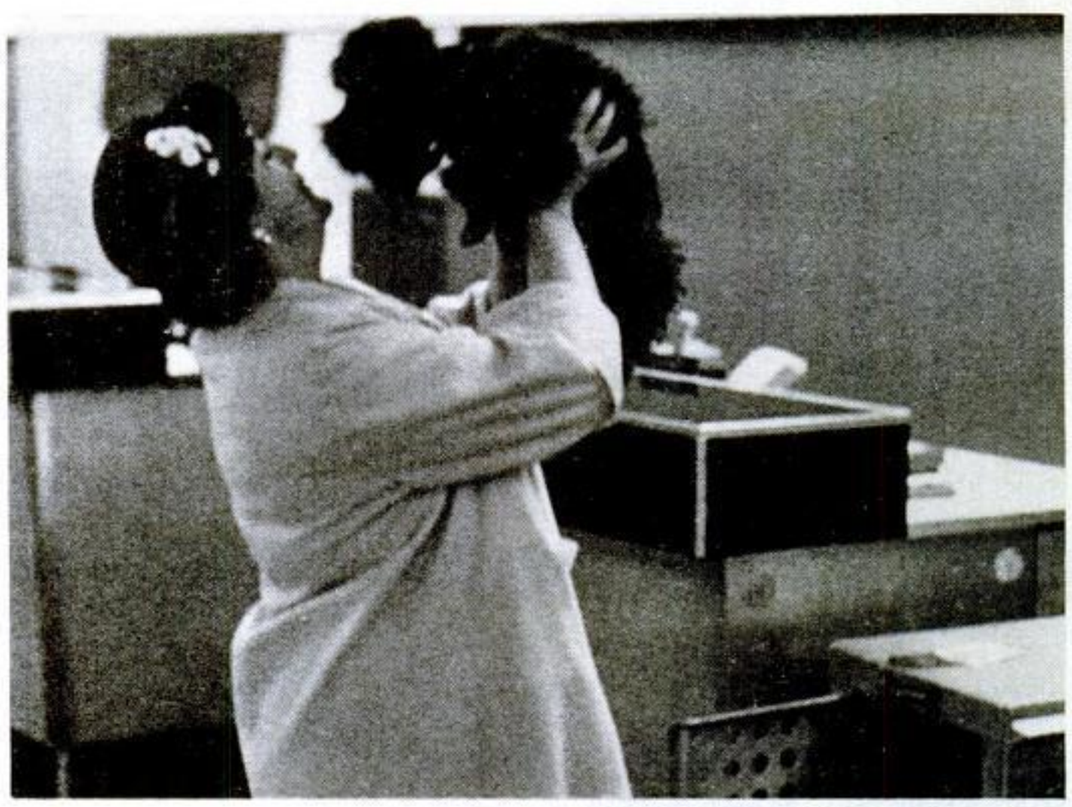
THE VIPS Throughout the day men of affairs moved into and out of busy air terminals as they tried to keep to hectic schedules that require the swift travel of flight. At the Washington National Airport, where VIPs are a familiar sight, Republican National Chairman Leonard Hall, who estimates that he flies 300,000 miles a year, flew in from his third air trip to New York in a week. Passing through the same airport a few hours later was Democratic Senator John Kennedy (*second picture*) of Massachusetts, who arrived from the Midwest where he had made a commencement address. In Chicago, Film Actor







A SMALL BOY One of the day's longest flights was made by Christopher Venn, 9, who was traveling from Boston to visit his grandparents at their ranch in southern Oregon. At the Logan International Airport in Boston he affectionately said goodby to his sister Tammy, 5, and his brother Timothy, 7, and took leave of his parents, Mr. and Mrs. Diggory Venn of Boston. Then he boarded an American Airlines DC-6 and took an aisle seat all the way forward, as close to the pilot as he could get. Airborne at 6:02 p.m., he easily made friends with his seatmate, Baldwin Tuttle, an industrial engineer of Framingham Center, Mass., showed him some live New England lobsters that he had bought in the Boston air terminal to take to his grandparents. He gratefully accepted Tuttle's help in carving his steak at dinner. At Chicago, after a 68-minute layover, he was put aboard a TWA Constellation for



ROSALIE KIRBY BIDS HER POODLE FAREWELL BEFORE FLIGHT TO CHICAGO



ATTENDANT BOTTLE-FEEDS PUMA CUB IN MIAMI



UNLOADED PENGUINS RUN

ANIMALS Creatures went aloft, too, and some of them required as much attention and as much fussing over as the most demanding of human passengers. But air transit is attractive to people who ship animals and want them delivered swiftly with a minimum of discomfort, and the airlines do not mind making special efforts to see that all goes well. For the convenience of pet owners like Rosalie Kirby (*left*), who flew from Los Angeles to Chicago with her poodle Caesar, some airlines provide portable kennels that are carried in special compartments and rent for up to $7.50 per flight. Some animals,

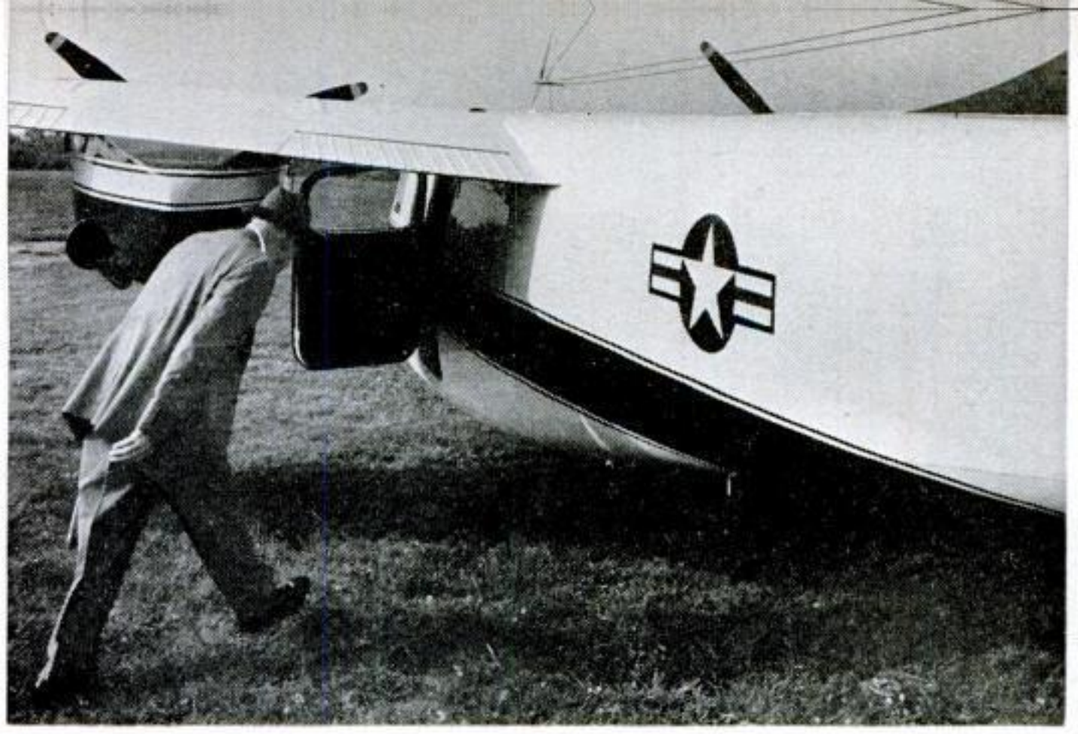
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SEEKS SPACE IN CHICAGO



SENATOR McNAMARA BUYS POLICY IN DETROIT



THE PRESIDENT BOARDS PLANE AT GETTYSBURG, PA. FOR WASHINGTON

Victor Mature (*center picture*) showed up at the Midway Airport too late to claim a flight reservation to Cleveland, and like many another passenger marked off as a "no-show," he had to make arrangements for passage on a later flight. In Detroit, Senator Pat McNamara (*fourth picture*), D., Mich., on his way back to Washington, paused to spend a dollar at the flight insurance machine. And President Eisenhower (*right*), who uses a private five-passenger Aero Commander airplane to save precious minutes, boarded it at Gettysburg, Pa. for the 22-minute flight back to Washington where, a few days later, he suffered his illness (*p. 49*).







the flight to San Francisco. Arriving there at 5:15 a.m., he was taken to breakfast at the airport restaurant by his aunt, Blanche Doyle of San Francisco, who then saw him safely aboard a Southwest Airways DC-3 for the last leg of the trip to Crescent City, Calif., nearest airport to the ranch. After take-off he had a brief spell of airsickness which soon gave way to drowsiness. The plane arrived at Crescent City at 11:30 a.m. and Chris, proudly handing over the lobster box, walked off with his grandparents, Mr. and Mrs. Charles Doyle. Airlines encourage travel by children, subject usually to certain rules: children under 5 must be accompanied by someone at least 12 years old. Children between 5 and 8 may travel alone on trips that involve no change of planes and, on some airlines, may change planes under supervision of airline service personnel if prior arrangements are made. Children of 8 or over may travel alone on domestic flights.



DOWN MIAMI CARGO RAMP



HANDLERS PACK A BOA CONSTRICTOR IN MIAMI

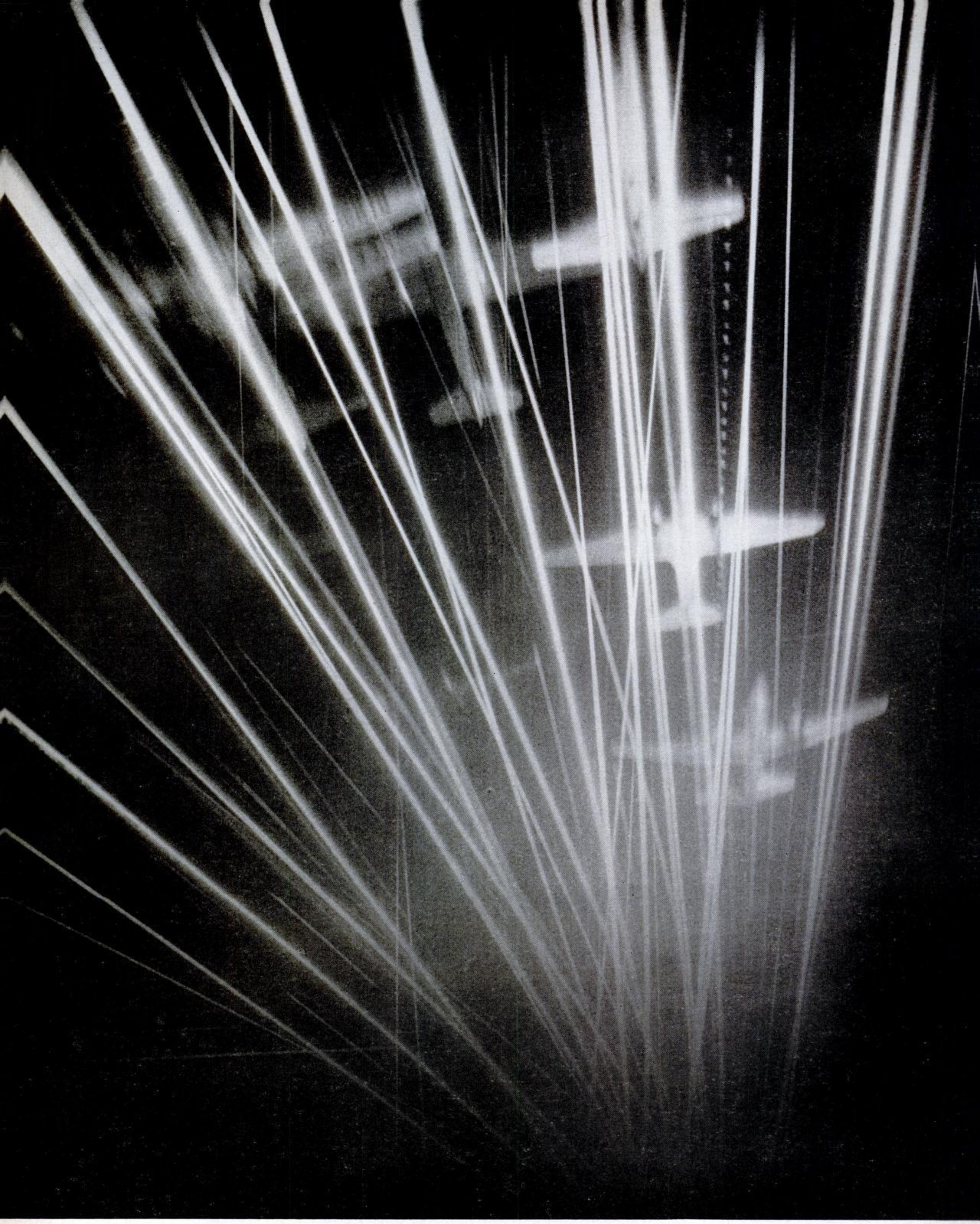


FRANTIC FLAMINGO IS PUT INTO CAGE AT MIAMI FOR FLIGHT TO NEW YORK

like the baby puma that is docilely nursing milk out of a bottle (*above*) at the Miami International Airport, are easily managed but are generally kept in cages just to make sure. Other animals can be trusted in the open, but releasing a flock of penguins on a cargo loading ramp at the Miami airport turned out to be a troublesome mistake when the birds waddled off in all directions and had to be recaptured. Handlers also had to cope with unpleasant or difficult specimens like the 10-foot-long boa constrictor (*left*) and the flapping, frightened flamingo (*above*) that behaved as if it wanted no part of man's era of flight.

CONTINUED 43

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HEAVINESS OF TRAFFIC is indicated by a series of time exposures made by a camera pointed upward at end of runway during two hours at New York's busy La Guardia Airport. Streaks are caused by lights on planes, some of whose undersurfaces reflected strobe light on ground. There were 38 arrivals and take-offs.

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Surprise! Soup Shakes!

Don't they look good?

They ARE! Want to try one?

Just take a can of Campbell's Tomato Soup. Add a can of cold milk. Or ¾ of a can, if you like shakes thick. Now a bit of cinnamon. And shake it like a milk shake. Or whir it through your mixer.

Chill your Soup Shake—and have it for lunch! Or whip up a pitcher of Soup Shakes for a back-yard-picnic supper.

Cream of Celery Soup and milk—that's a good one. So cool and frothy! With subtle flavors too good to miss. Cream of Chicken makes another we like—try it with milk and a garnish of cucumber or parsley. You'll be surprised, too (and so pleasantly), with the wonderful flavor of a Cream of Mushroom Soup Shake.

It's the new way to drink to your health. For all soups are good for you. And soups made with milk are enriched with added proteins, vitamins and minerals.

Any Campbell's Soup in the house? Is there milk on ice? *Do* have a Soup Shake! *Now!*



SOUPS SUPPLY BASIC NUTRITIONAL NEEDS

VITAMINS, MINERALS and LIQUIDS
—for general well-being

PROTEINS—for upkeep and growth

CARBOHYDRATES—for energy

Once a day . . . every day . . . SOUP!

Copyrighted material



Now showing—the happiest "double feature" of the year! One part is bold, new Motoramic styling. The other is record-breaking V8 action.

Hollywood has a heap of words that describe it: colossal, stupendous, magnificent. We'll settle for just the name—Chevrolet.

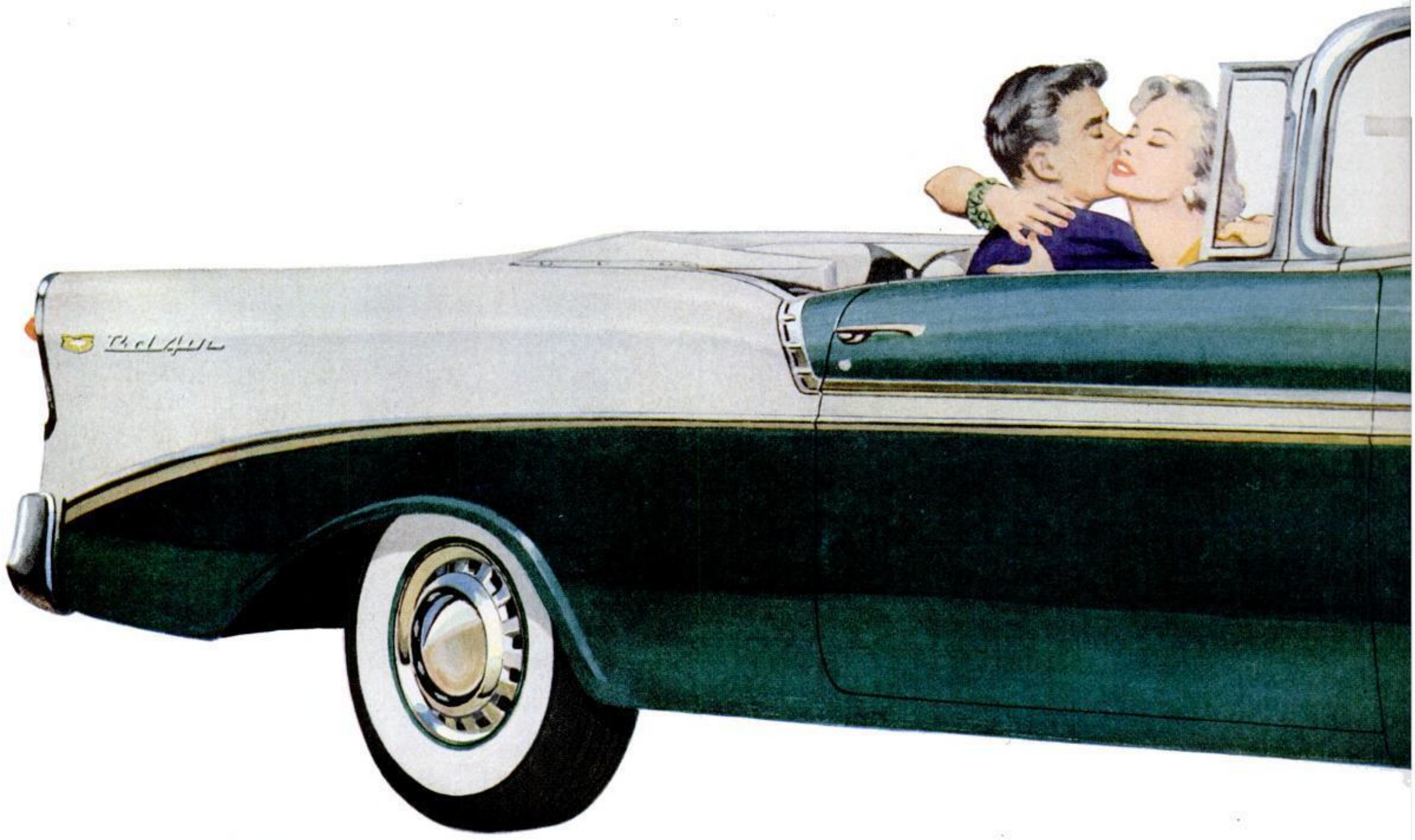
Because once you've driven this sweet-handling showboat, the adjectives will take care of themselves. Once you've sampled Chevy's hair-trigger reflexes and nailed-down stability, you'll see why it's one of the few great road cars built today!

Horsepower that ranges up to 225 makes hills flatter and saves precious seconds for safer passing. And the way this Chevrolet wheels around tight turns would gladden the heart of a dyed-in-the-wool sports car fan.

Come in and highway-test this new Chevrolet.

SEE YOUR CHEVROLET DEALER

youth, beauty, Chevrolet, action!



The Bel Air Convertible with Body by Fisher—one of 20 frisky new Chevrolets

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The Symbol that links the modern dairy to your modern way of living

Today, fresh milk in a Bright-White fibre carton is as handy as the refrigerator in which you store it. This great improvement in milk "packaging" bears a symbol you probably seldom notice.

The symbol is a trade-mark—a small oval on paper cartons made by American Can Company.

Back of it is Canco's conviction that the fibre container is by far the best way to bring milk within the reach of everyone . . . quickly, conveniently, economically.

Back of it, too, is Canco's motto, "Can do," and the *spirit of cooperation* that makes this motto work.

BEHIND THIS SYMBOL ARE THE SERVICES OF CANCO'S "CAN DO" MEN. READ HOW THEY ADDED "CONVENIENCE" TO THE ENJOYMENT OF DAIRY-FRESH MILK.



FLIP—IT'S OPEN! Canco Snap Cap carton is easiest to open. "Controlled pouring" makes it simple for children to serve themselves.



SNAP—IT'S CLOSED! Push down Snap Cap. That's all! Closes faster, easier, tighter. It's another accomplishment of Canco's "Can do" men.



PHYSICAL CHEMIST DR. L. E. HOAG is one of the many specialists contributing to the superiority of Canco milk containers. Faced with challenges Canco people have always answered, "Can do!" Result: leadership—yesterday, today, tomorrow!

"Can do"... *that's the spirit of* American Can Company

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PRESIDENT'S GRIN broke out at the White House photographers' dinner a few hours before his intestinal attack.

A SHOCK FOR A WORLD AND A WIFE



The President undergoes surgery with 'most satisfactory' results

Only hours after he appeared, buoyant and grinning, at a Washington dinner, the President lay ill in a hospital and the anxious face of Mrs. Eisenhower showed the sudden change.

The first announcement of the President's illness had come the morning after the dinner. Before dawn the following day the President underwent a 113-minute operation to relieve an intestinal obstruction (*p. 52*).

Once again the world hung tautly on bulletins from the President's sickroom. Across the U.S. prayers were offered for his recovery. The stock market dipped sharply at the news of the illness.

Waking after the operation, the President grinned and said, "What a bellyache." The bulletins were encouraging: his condition was "most satisfactory." Next week, the doctors told newsmen, the President could sign official papers. Within four to six weeks he should be able to resume the full burden of office.

This answered questions about the immediate problem of running the government. There remained a major political question. Reporters asked Surgeon Leonard Heaton, who performed the operation, if he thought there was any reason why Mr. Eisenhower could not run for reelection. "I certainly do not," he said firmly.

WIFE'S WORRY is revealed in Mrs. Eisenhower's face the next day as she rides to the hospital to begin her vigil.

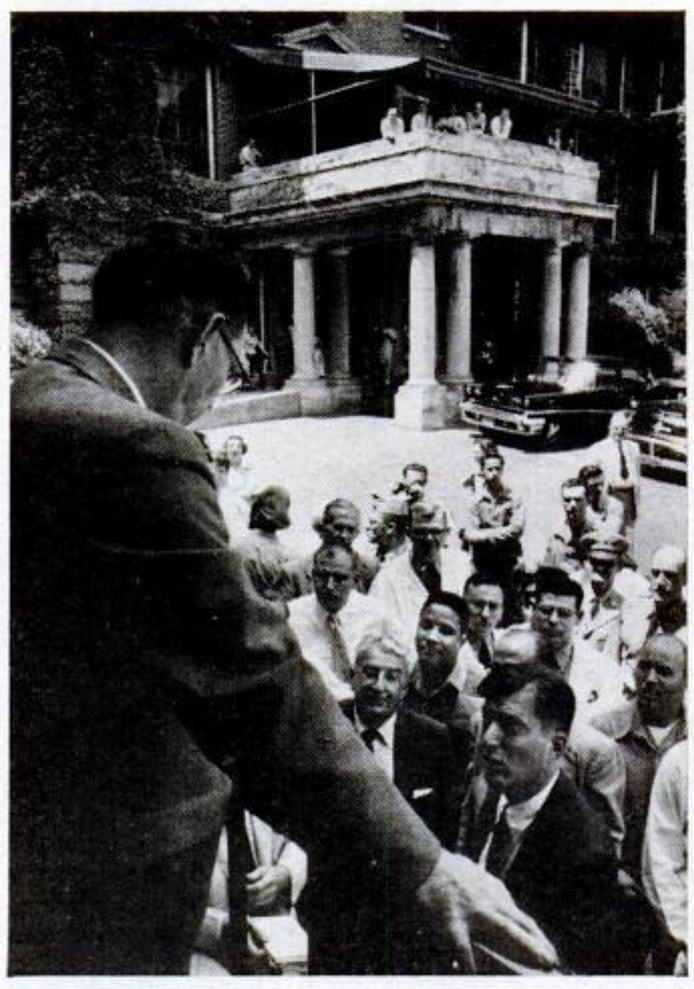
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LEAVING FOR THE HOSPITAL EARLY FRIDAY AFTERNOON, THE PRESIDENT, ON A STRETCHER, IS LIFTED INTO AMBULANCE AT SOUTH PORTICO OF WHITE HOUSE



RUSHED NORTH, parachuted Heart Expert Thomas Mattingly rode in jet trainer from South Carolina.

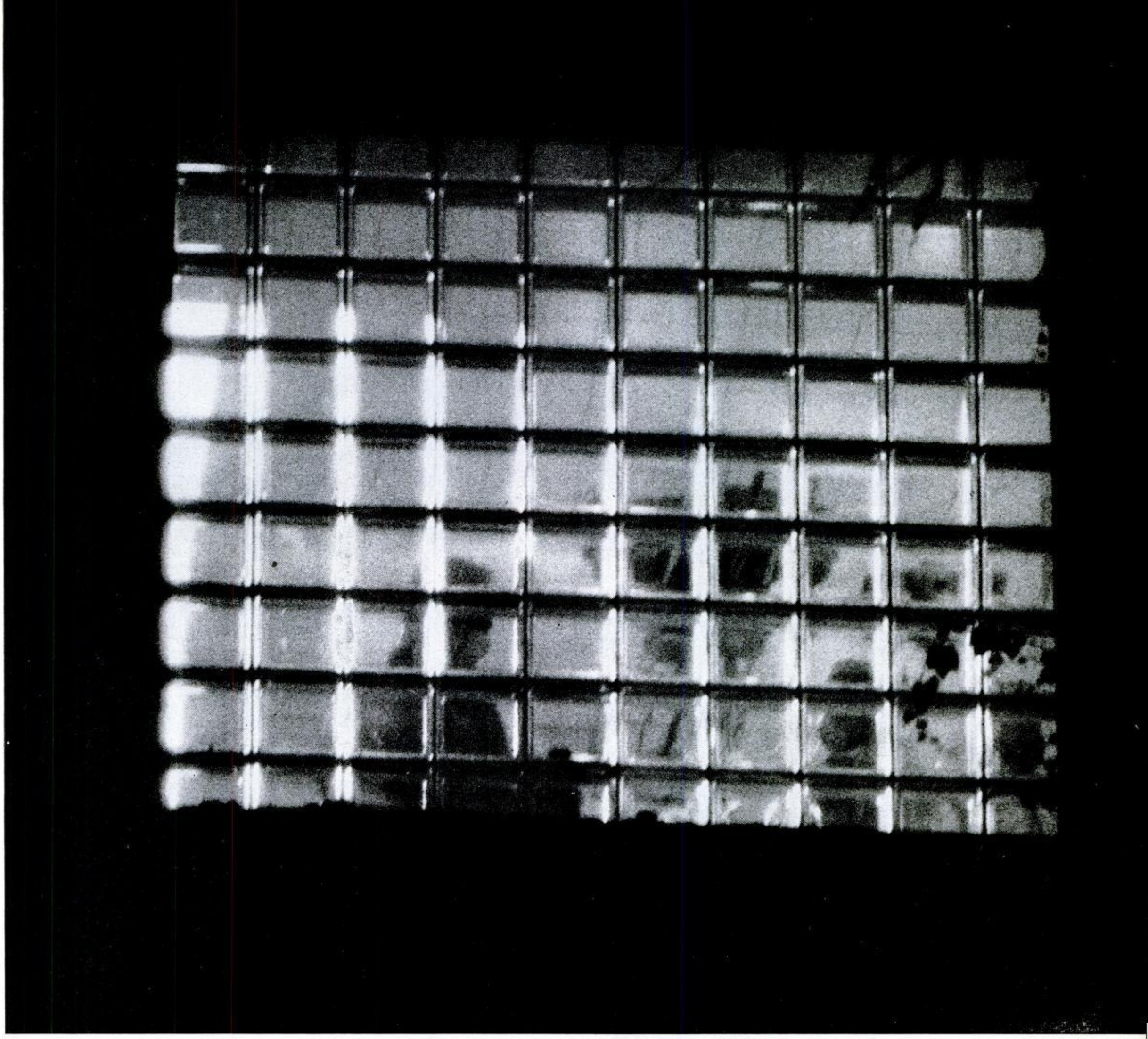


BRIEFING NEWSMEN, White House Press Secretary Jim Hagerty leans over railing at Walter Reed.

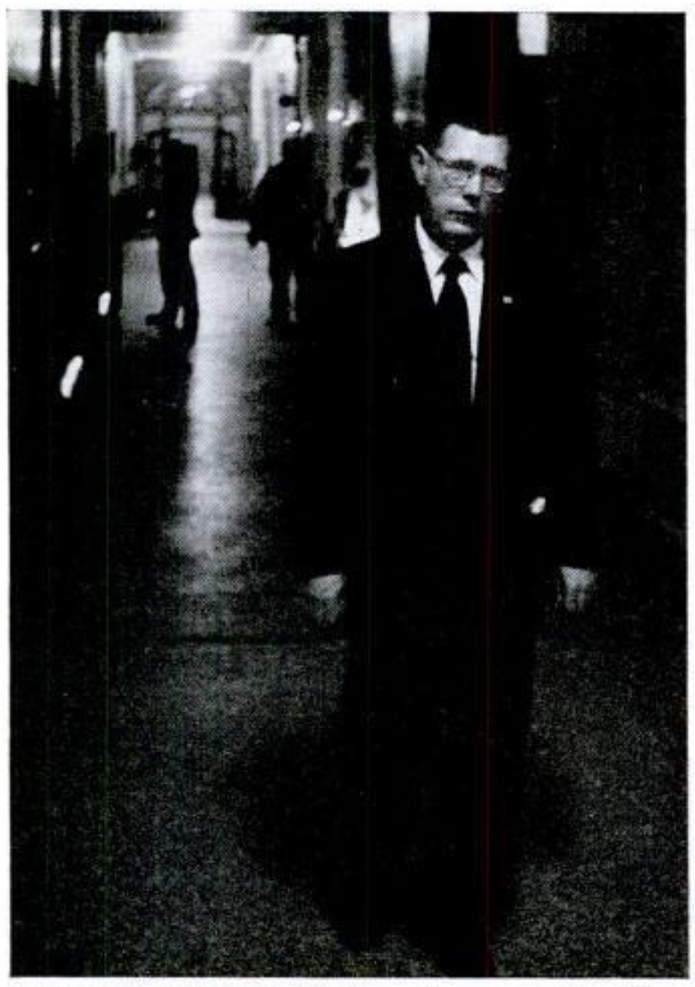


PRAYING FOR PRESIDENT at G.O.P. meeting, Vice President Nixon listens to Rev. F. B. Harris.

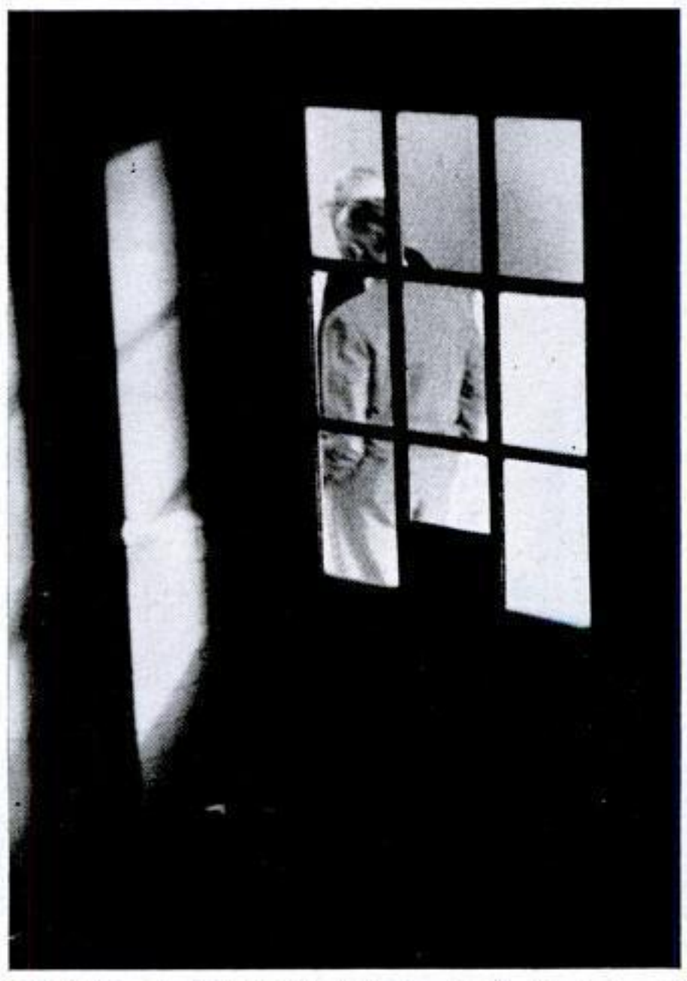
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BEFORE DAWN, THROUGH THE GLASS-BRICKED WINDOW OF THE OPERATING ROOM, FIGURES ARE DIMLY SEEN AS PRESIDENT UNDERGOES THE LONG SURGERY



BEFORE OPERATION Press Secretary Jim Hagerty walks wearily away after talking to newsmen.



DURING OPERATION Radiologist E. A. Lodmell talks to White House doctor, Howard Snyder (*rear*).



AFTER OPERATION Heart Specialist Paul Dudley White of Boston, who stood by, prepares to leave.

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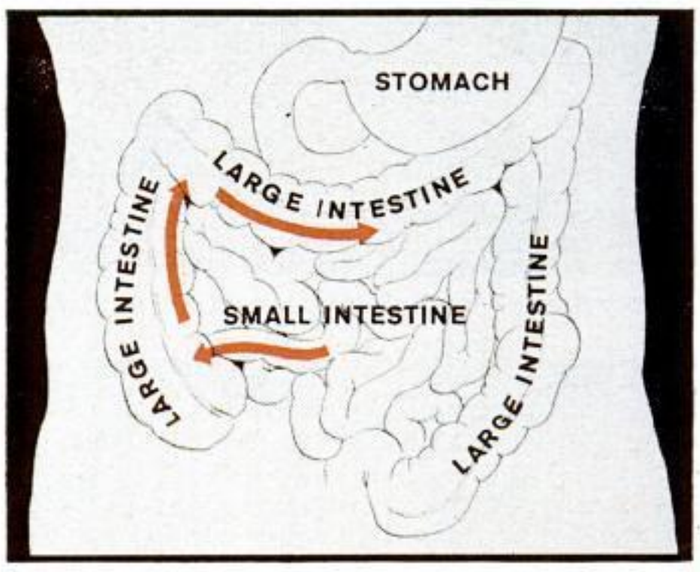


OFFICIAL EXPLANATION of the operation is made by Major General Leonard Heaton, commandant of Walter Reed Hospital. Seated below the drawing is Hagerty. Beside him is Surgeon Isidor Ravdin, who was flown in specially from Philadelphia to consult on the case. Standing at right is a hospital surgeon, Major Arthur Cohen. Across empty chair from Hagerty is Major General Howard McC. Snyder, the President's personal physician. The others are reporters.

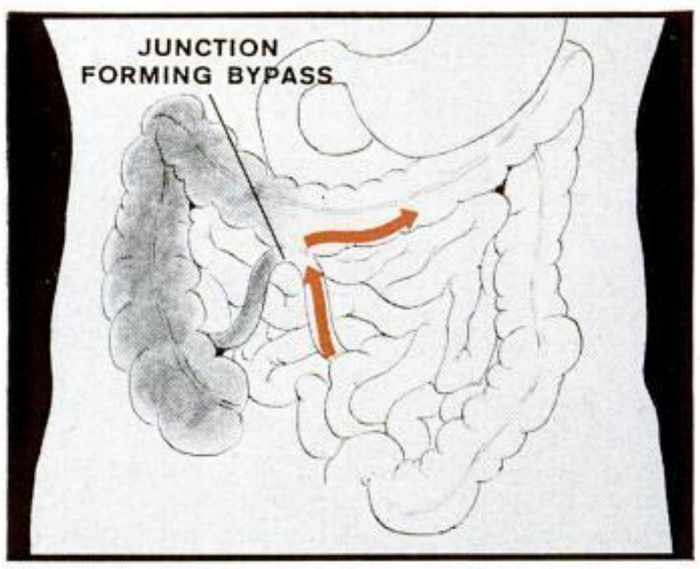
ILEITIS AND THE OPERATION . . . 'HE SHOULD BE BETTER OFF'

Nobody knows what causes ileitis, the disease which affected the President, though some think a virus is to blame. It is frequently a recurring ailment, in which part of the small intestine becomes inflamed. Usually the inflammations flare up and die down over the years, leaving layers of scar tissue in the wall of the intestine, narrowing the passage. In the course of time a fresh flare-up in the already narrowed passage may actually block it, as it did in the President's case. Then waste material and gas back up, distend the intestine, squeeze off the blood supply to the intestine walls. Rapid surgery to relieve the pressure is the only way to prevent fatal gangrene from setting in.

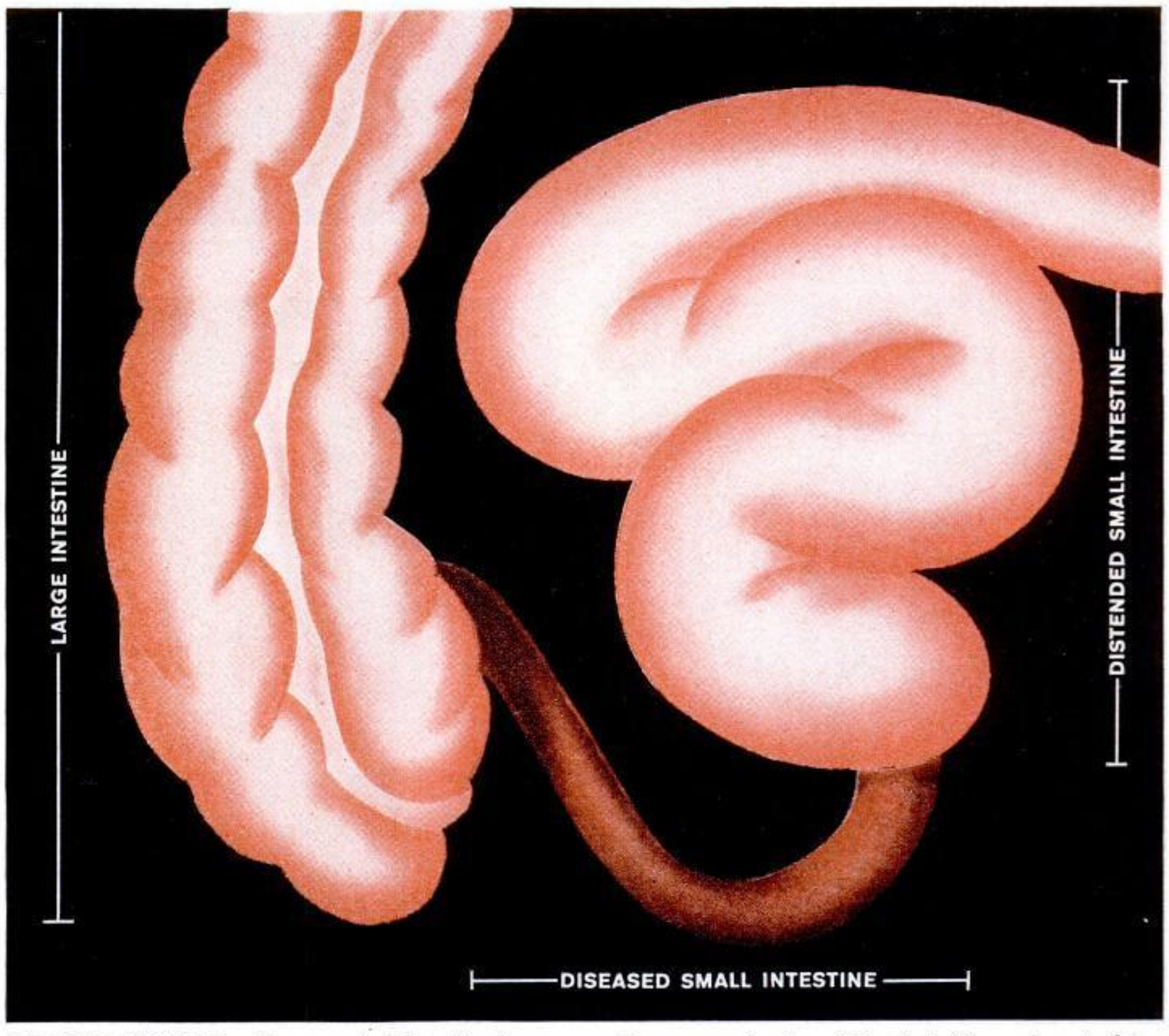
In operating to correct ileitis the diseased section is sometimes removed along with part of the large intestine which shares the same blood supply. The two severed ends are then sewed together and the patient is none the worse for having his intestines shortened by a few feet. The President's surgeons took an alternate course. They bypassed the diseased area and, instead of removing it, left it in place as a functionless loop. They believe the loop will cause no further trouble and hope the disease will not strike again elsewhere. The President "should be better off now than he was previously," said Dr. Isidor Ravdin, one of the surgeons. Asked whether the operation affected the President's life expectancy, Dr. Heaton replied, "We think it improves it."



NORMAL INTESTINE consists of about 25 feet of small intestine and about six feet of large intestine. The red arrows show the normal passage.



AFTER OPERATION passage (*red*) bypasses the blocked area and part of the large intestine (*shaded area*). The bypassed section is about 2½ feet long.



CLASSIC ILEITIS is demonstrated in this drawing. The lower 10 inches of the small intestine is inflamed (as was the case with the President) and the passage is almost blocked. Gas and waste have backed up, distending the upper part of small intestine to more than twice its normal circumference.

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THE DEANS STAGE A '49er PARTY to celebrate their discovery of a brighter way of life.

SHINING EXAMPLES OF THE "BRIGHTER LIFE"

The William Deans of Cleveland, Ohio, our idea of a typical American family, took a good look at their budget—and found a gold mine.

A phone call eight months ago started the joyous revolution in the Deans' way of life. Their neighbors, the Crawfords, intimate enough friends to be frank about their never-quite-big-enough-to-go-around income, invited them to a "housewarming." No, not really a new home, Hazel Crawford said—but a gorgeous new look to the old one — and as a matter of fact, to the Crawfords themselves.

As Bill and Helen Dean admired the dressed-up Crawfords and all of their smart new home furnishings, John Crawford proudly explained. Hazel had opened a Budget Power Account with Spiegel, in Chicago to get their big catalog. When it came she sat down and went shopping — soon had the whole family looking over her shoulder. "We found the smart new things we'd been dreaming about," Hazel said. "A catalog is fun — it's convenient — and we were amazed at the good taste—and the low prices." Then John answered Bill's big question—where had the money come from? John said the Spiegel Budget Power Plan, an entirely new concept of credit, gave them a substantial lump sum of credit to use continuously — over and over again — just like cash. It was really an "investment in living"—for Budget Power made it possible to EXPAND the few dollars left in the budget each month — after providing for house payments, grocery bill and John's "sacred" savings account at the bank. It made the difference between just skimping along or living the "brighter life" the Crawfords are enjoying — with peace of mind — and no regrets.

As Budget Power Plan members, the Crawfords were told how much credit was available to them—a Credit Trust Fund tailored to their needs. They can use any or all of it, as they wish—and the dollars that were once frittered away take care of the monthly Budget Power payment. When they buy, they draw from their Fund—but every payment goes right back in to be used again. The Crawfords have no worries about using their credit to the full, because Spiegel purchased and paid the premium on their Double Protection Prudential Insurance. If anything happens to John, the balance on their Account will be paid—up to $1000.

Spiegel advertisement continued on next page

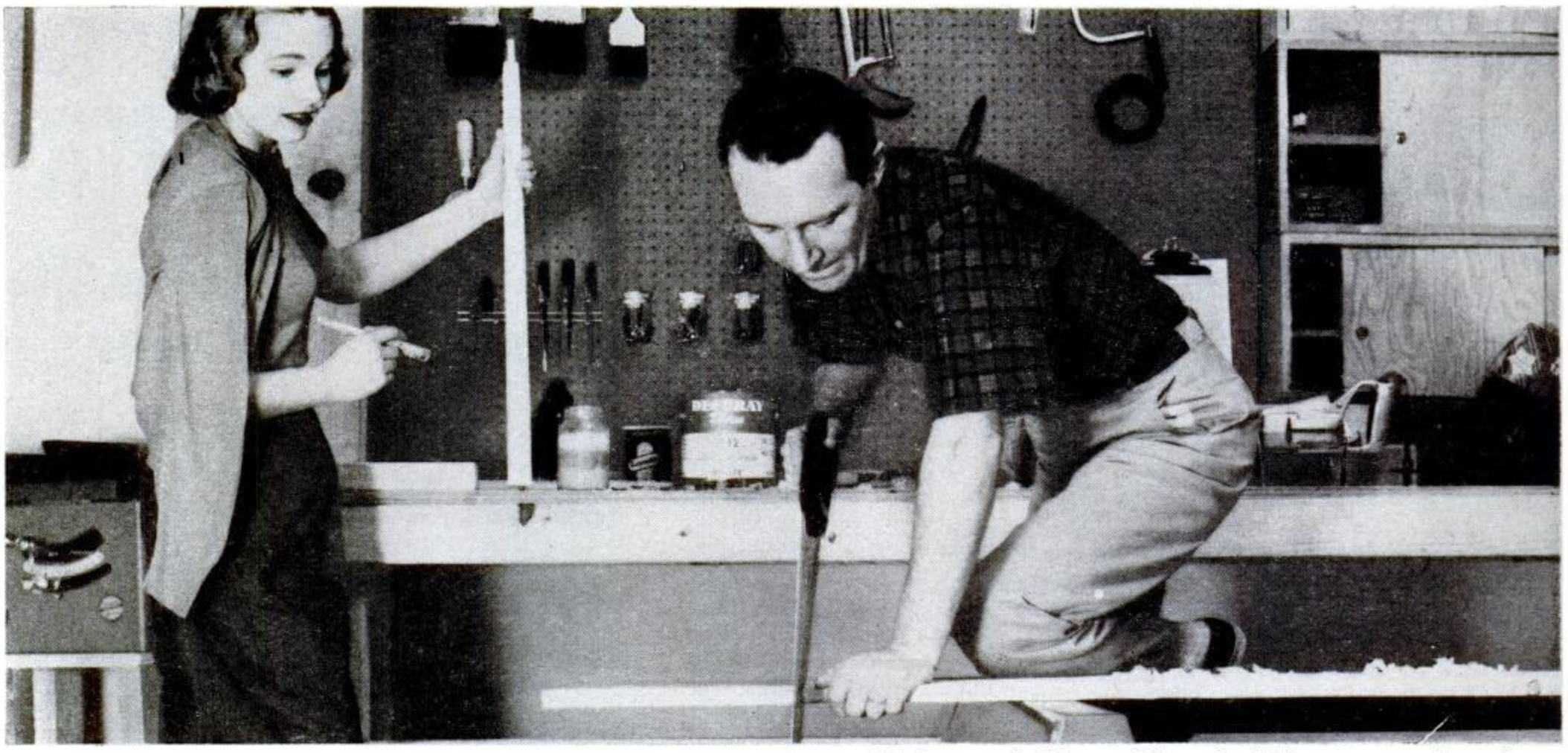
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THE DEANS followed the Crawfords' example and became Budget Power members, too. Here's Mrs. Dean with daughter Jane, planning smart new wardrobes from the Spiegel Catalog for their "brighter life"—with enthusiastic approval from dad.

NEW WEALTH ON THE SAME

The Deans discover the safe, sane, insured way to stretch their buying power.



CELLAR INTO HOBBY ROOM —the job done with Bill's tools from the Spiegel Catalog—budgeted painlessly over several months. All the smart fashions and home furnishings . . . even the pet burro shown in this picture-story came from the big Spiegel Catalog.

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THE DEANS received their Double Protection insurance at no added cost. A group policy written by The Prudential Insurance Company of America protects more than a million families who are members of the Budget Power Plan. The insurance takes effect automatically on becoming a Budget Power member . . . with no medical examination and no red tape. In the event of death, Prudential pays any balance on the Account . . . up to $1000; and pays an equal amount in cash for Accidental death. There are also specified cash benefits for the loss of eyesight or limb. No wonder the Deans rely on Spiegel.



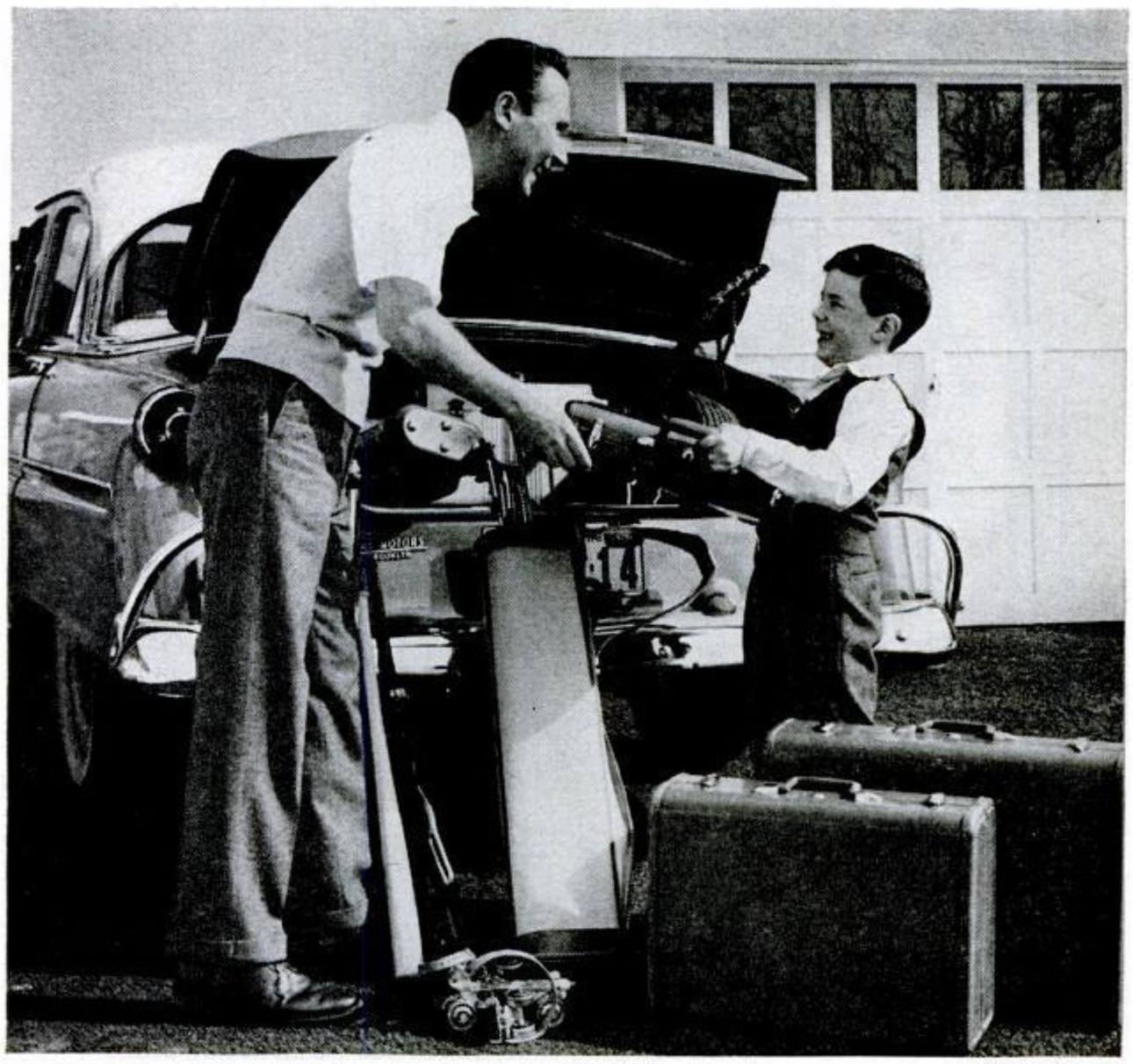
BILL AND JUNIOR DRESS for their respective roles of up-and-coming business man and popular student—they look right and *feel* right—Spiegel is first in fashion.



THE KITCHEN, a gay and colorful room, is sparkling proof of the wonders the Spiegel Catalog has worked in the once rather drab little home.

OLD INCOME

Over the months, the Deans have brightened their home, enlarged their wardrobes and added delightful extras to their living—all from the Spiegel Catalog—all charged to their Budget Power Account—with the comfortable assurance that every penny would be paid by Bill Dean's Prudential insurance if the unexpected should happen. They have the freedom to buy what they want when they want it, but are never obligated to spend a cent more than they think wise.



OUTDOOR FUN AND EQUIPMENT for all the family fit both the brighter life and the Deans' budget thanks to Spiegel Budget Power.



JANE'S ROOM is the center of social life for those who "belong" to the teen age set. Here's where they make music—or cram for exams.

MAIL COUPON FOR FREE CATALOG TODAY!

SPIEGEL, Inc., Dept. R-128, Chicago 9, Ill.

I wish to open a Budget Power Account, and get a Catalog.

NAME_____

ADDRESS_____

TOWN_____ STATE_____

IF MARRIED, ANSWERS MUST APPLY TO HUSBAND

Check One
- ☐ Married
- ☐ Single
- ☐ Widow(er)
- ☐ Divorced or Separated

Check One
- ☐ Own your Home
- ☐ Rent
- ☐ Live with Parents
- ☐ Room Elsewhere

How many children do you support____

What is your age____ What kind of work do you do_____

Your present weekly earnings_____

Additional and Wife's, if any_____

Employer_____
(Give Company Name and Address)

How long with present employer____ How long with previous employer____

Name of your bank_____
(Give Name of Bank and Town)

PLEASE SIGN HERE_____

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Science, Sickness— and Character

THE technological marvels of the air age are changing American society faster than the automobile changed it, faster than it has ever been changed before. The air age is playing hob with the tempo of life and even the sense of time. It has transformed not only war but world politics, bringing heads of distant states face to face overnight. It is changing our educational system, offering rewards to the man with a slide rule that give a feeling of obsolescence to the man with a knowledge of Greek. It is forcing us to face the imminent fact of flights to the moon.

All this and more the age of high technology, of which aviation is just one striking example, is doing to us. But one thing it has not done, and never can. It has not diminished by one jot the value, the supreme importance, of an individual and his character. This was never plainer than when President Eisenhower went to Walter Reed for his sudden operation last week.

There are probably at least 20,000 surgical operations in the United States every day. Every one of these personal crises, small or serious, radiates throughout the circle of the patient's friends and family and colleagues; life for a few, perhaps for hundreds or thousands, will not be the same if the operation fails. Every one of us, man, woman or child, is a "key man" in that sense. And it is our character, gifts and personalities, and not our slide rules, drills, desks or kitchens, that make this difference to the life around us. When the "key man" happens to be the President of the United States, this central importance of individual character comes home with a thud.

Eisenhower may or may not turn out to be one of our great Presidents. Some have been disappointed but Professor Clinton Rossiter, in a book, *The American Presidency*, evaluates Eisenhower in what may be the middle of his service and makes an intriguing guess as to what history will say. History, says Rossiter, "usually prefers to ignore the President who promises peace rather than progress," but it "ought to make a special effort" to remember Eisenhower for having "done a job that the American people wanted to have done." This job was to heal our internal dissensions and give us external peace. He has so succeeded that "the country is basking in a climate of unity it has not enjoyed for 30 years or more."

Peace at home and abroad. "We were weary of reform in the one area and of adventure in the other. . . . Almost by definition, then, the times are the kind in which a President may win fame and gratitude but not immortality. Eisenhower has not been cut off completely from greatness by the nature of his times and mission, but he, like Theodore Roosevelt, must travel farther and faster in search of it. And as a gradualist in a time of gradualism, he has never really put his heart in the attempt."

Perhaps he has not. Perhaps he is too humble for that. But what he has done, and what nobody could have done so well, is to put his *character*, including its humility, at the service of our country's and the world's peace. That character is so honest, generous and clear, and shines through a personality so winning, that he probably enjoys the confidence of more people than any man alive. One small testimony to that confidence: although everybody is yakking out an opinion on whether he should now reconsider his candidacy for a second term, none of these opinions will be firm until Eisenhower gives us his own, and most of us will probably be guided by that.

One of Eisenhower's good qualities as a President, says Rossiter, is his luck. Thank God for it, and here's hoping it stays with him through this unexpected setback. Even that may serve a good purpose if it reminds us how much we owe to Dwight Eisenhower's character, and how much even an age of scientific marvels depends on human character in all its forms.

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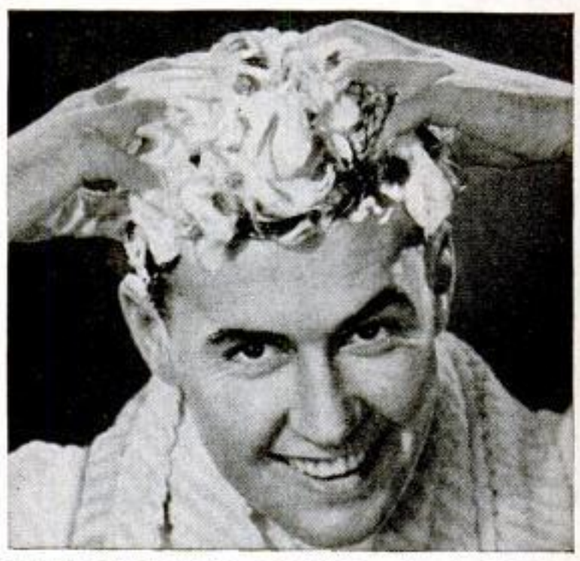
so much a part of your busy life

There's a fresh, clean breeze sweeping the land that has brushed away the cobwebs of what women can and can't do. Your interests cover the wide world you live in. But on one point you're firm. No activity of yours is going to creak to a halt because of monthly difficulties—not when Tampax is so sure, so secure, so available. Tampax internal sanitary protection gives you the poise and confidence you want, the comfort and freedom you must have. No wonder millions of women use it. Tampax Incorporated, Palmer, Mass. TAMPAX

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Very first shampoo

removes ugly dandruff, brightens hair UP TO 35% too!



FOR CLEANER SCALP, dandruff-free hair, always use Fitch! Guaranteed to remove ugly loose dandruff... or your money back!



FIRST FITCH SHAMPOO gets rid of those dulling dandruff flakes... thus brightens hair as much as 35%! Tests prove it!

No other shampoo guarantees brighter, dandruff-free hair

... or money back!

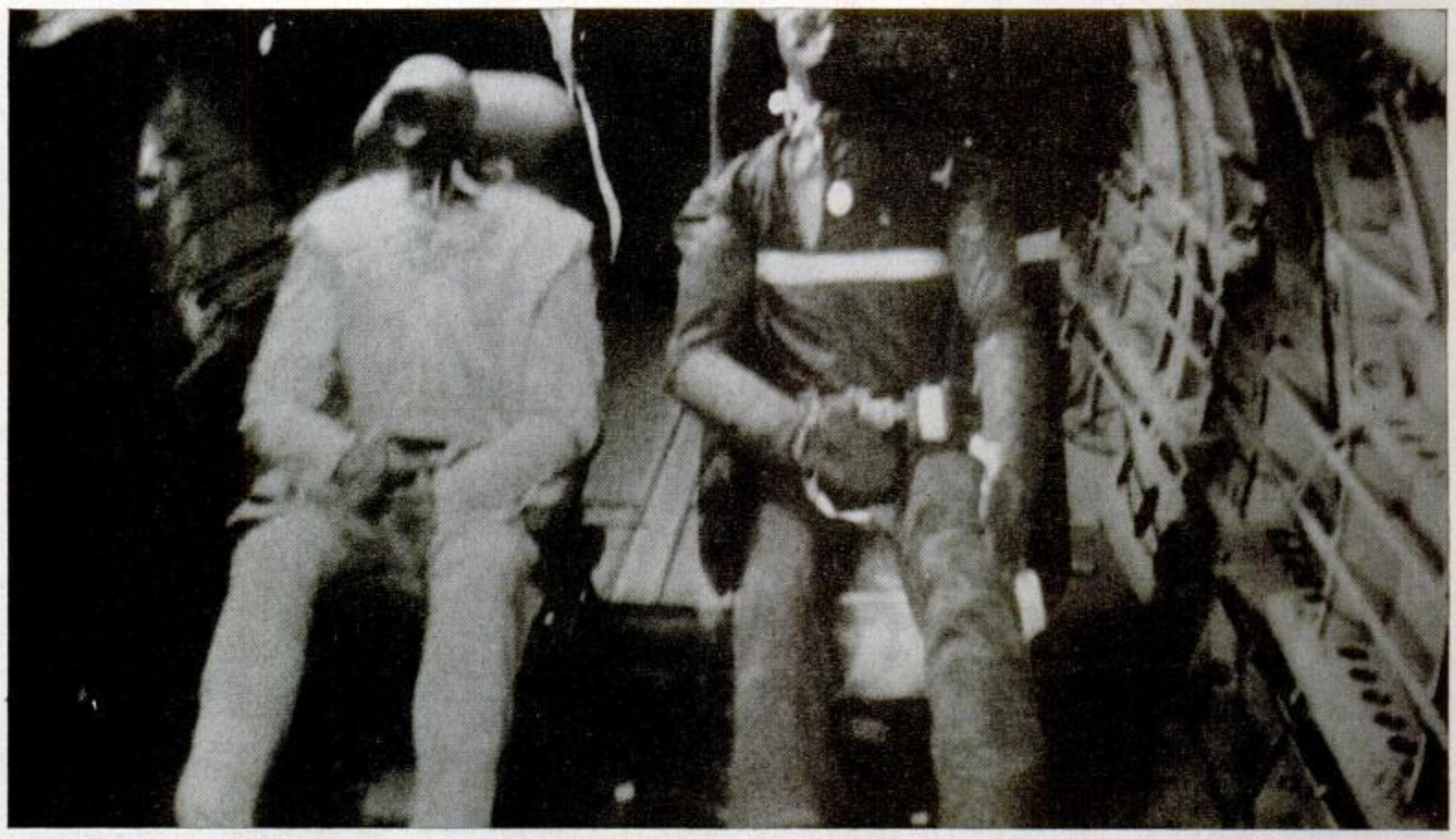
Nearly everyone has dandruff. That's why men and women everywhere use amazing new Fitch Dandruff Remover Shampoo *regularly*. It's the only shampoo specially made and *guaranteed* to remove every trace of flaky dandruff with one shampooing... or money back!

And remember... when Fitch removes dulling dandruff flakes, your hair looks up to 35% brighter too! What's more, new Fitch is so mild, so gentle, you can use it *every* time you wash your hair... not just to remove ugly dandruff.

Get the new, milder Fitch Dandruff Remover Shampoo at retail counters. *First* shampoo removes flaky dandruff—brightens hair up to 35% at the same time—or you get a full refund from Fitch. Ask for professional Fitch Shampoos, too, at Barber and Beauty shops.

Also available in Canada!

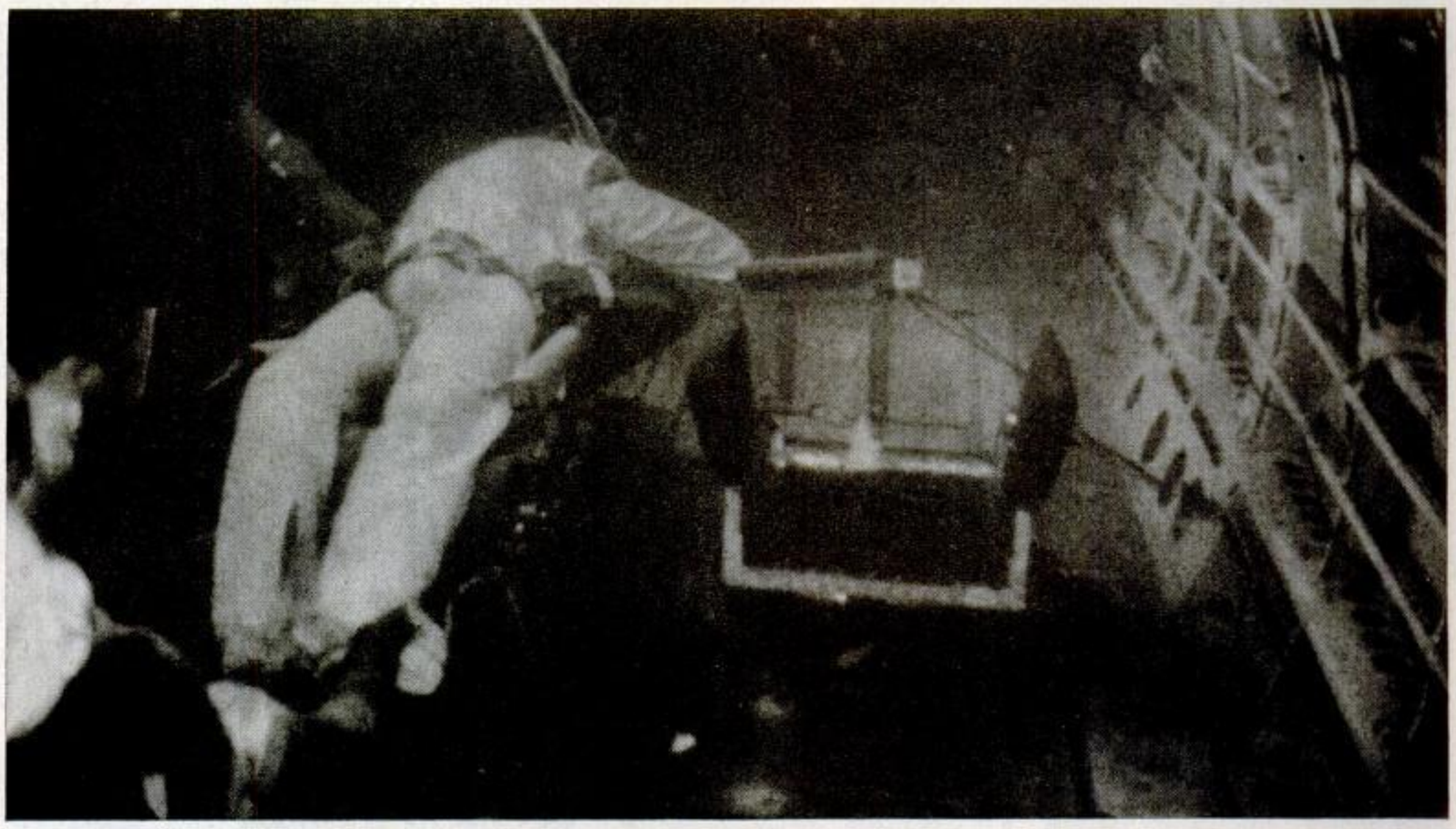




MOMENTS OF CRASH whose start and end were shown on previous page are here photographed by movie camera looking head-on at dummies facing rear of plane. Dummy which is facing to front of plane is barely visible at left.



SECOND AFTER IMPACT dummy on left waves its arm wildly. Seat in the center splits, breaking dummy at waist and toppling it backward. Seat at the right has already come loose, hurtling its dummy to the front of plane.



AS PLANE STOPS, dummy in the center lies broken and sprawled over split chair. Seat at the right has completely disintegrated leaving only its base. Dummy at extreme left settles back in its place. Sequence took four seconds.

CONTINUED

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ESTHER WILLIAMS SAYS:

"Get in the Swim ...it's Canada Dry Time!"



Esther Williams, with sons Benjie and Kim, beside one of the new Esther Williams Swimming Pools on sale nationally. See your local dealer for the "Esther Williams Swim Pool Pak."





Do like Esther Williams and her family! Dip into the cool, quenching refreshment of Canada Dry Ginger Ale—deliciously dry, not too sweet. Or head for the raft of other tempting Canada Dry flavors, including all your True Fruit favorites. Last one in will be lucky if there's any left—it's Canada Dry time!

CANADA DRY

Guaranteed by Good Housekeeping

THE FLAVOR YOU LIKE...THE NAME YOU KNOW

True Fruit Orange • True Fruit Black Cherry • Grape • Root Beer • Spur Cola • Hi-Spot Lemon Soda • Cream Soda • Ginger Ale

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"You're a man alive" in a CLIPPER CRAFT suit



Put on a Clipper Craft Dacalena tropical, and you're miles ahead of the rest . . . new strength in your handshake . . . new force to your ideas. It's the way you feel in that cool, light, rugged Dacalena blend . . . the way you look in the contrasting weave or modern textured effect you choose. And Dacalena keeps its handsome appearance — keeps you cooly comfortable. Now look at that low, low price! . . . The result of the Clipper Craft plan, combining the purchasing power of 1226 stores to keep you best-dressed for less.

$39.75

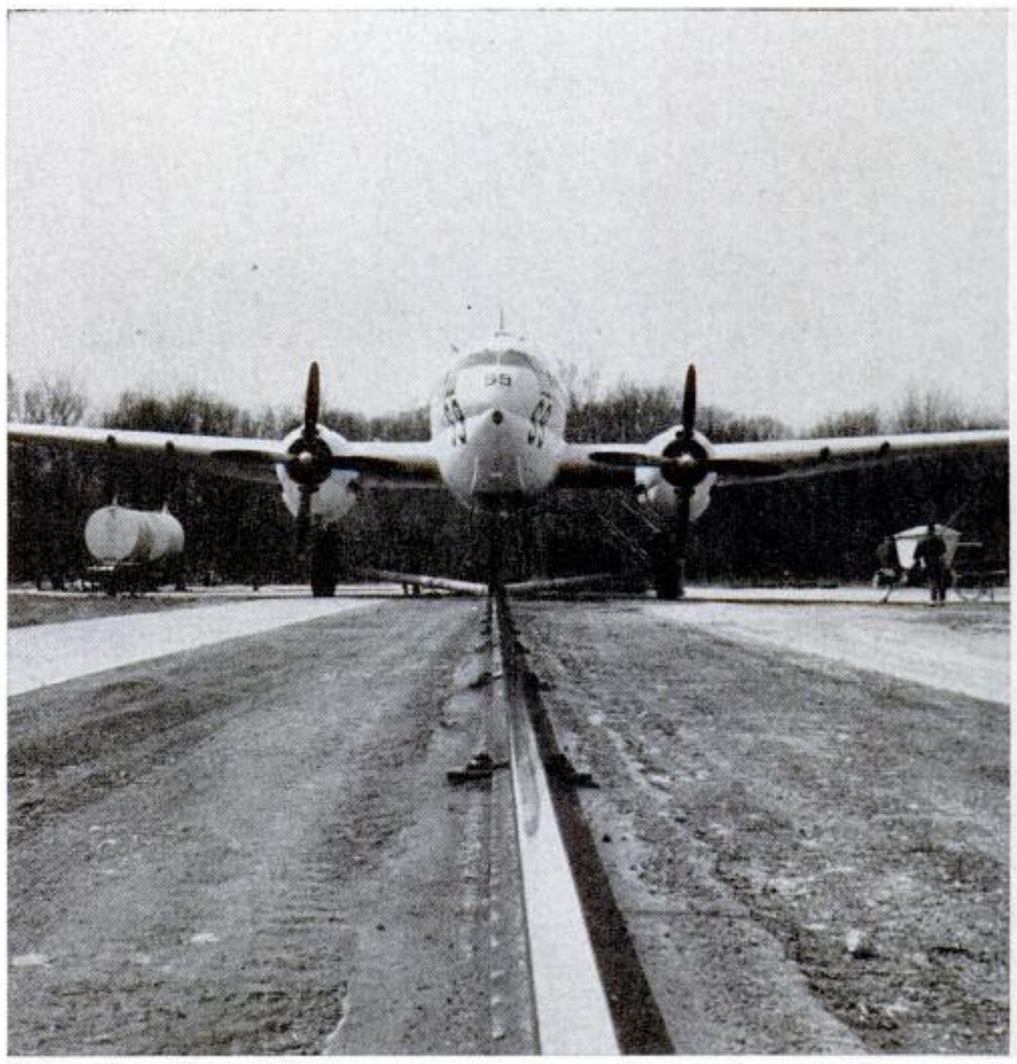
Other Clipper Craft Tropical Suits $34.75 to $50.

CLIPPER CRAFT CLOTHES

For the store nearest you, write: Dept. A4

TRIMOUNT CLOTHING CO., 18 Station Street, Boston 20, Massachusetts.

SAFETY SMASH CONTINUED



AT START OF CRASH RUN plane stands on 1,700-foot runway. Front wheels are attached to guide rail which leads down runway to crash barrier.



SHATTERED BY IMPACT the plane settles down following crash. To limit fire, tanks held only six gallons of gas. Worn out planes were crashed.

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Home movies expensive? No sir! Kodak now brings you a movie camera for only $29.95!

Kodak's new Brownie Movie Camera, f/2.7, is precision-built, makes full-color movies as easy to take as snapshots!

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So get in on the fun of movies with Kodak's new Brownie Movie Camera, *f*/2.7. Get yours at your Kodak dealer's for only $29.95.

Free Booklet! "How to Choose and Use Your Movie Outfit"—at your Kodak dealer's, or write to Kodak. (*Camera price includes Federal Tax, is subject to change without notice.*)



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New Orleans Rue Royale Kitchen . . . about $31.00 a month.* From left, G-E 12-foot Refrigerator-Freezer with separate doors, Pull-Out Dishwasher, Sink with Food Waste Disposall,® handy Base Cabinets, high-speed Range Surface Units, built-in Wall Oven, matching Wall Cabinets. Built-in beauty!



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Right now . . . available *today* . . . fully harmonizing, wonderfully adaptable G-E Kitchens.

Only General Electric brings you *everything* from stack-on appliances to matching paints and countertops.

See how easily they can be teamed and schemed to create a kitchen wonderfully individual and inviting. The one for your home!

If you modernize, as little as $26 a month, based on credit terms under a Kitchen Modernization Plan through General Electric Credit Corp. Including planning and designing just for your special needs.

If you're building or buying, as little as $4 or $5 a month added to your long-term mortgage. When you buy G-E appliances, you can have G-E planning services for an integrated kitchen at no extra cost. Your dealer will work with your architect or builder. Or, see G-E kitchens in new homes priced from $10,000 up.

G-E PLANNING SERVICE

Look under "G-E Dealers" in your classified phone book for the one nearest you. Drop in and see his dozens of G-E kitchen designs, complete with matching accessory guides. Or write to General Electric Home Bureau, Appliance Park, Louisville 1, Ky., for free literature on kitchens.

Your G-E dealer can offer you: a custom-design service for kitchens • decorating schemes with 5 Mix-or-Match colors • readily available paints to match • sources for floor coverings, fabrics and wallpaper in harmonizing Mix-or-Match colors • names of builders who install G-E kitchens in your area.

How to modernize the step-by-step way



1. Start with one G-E Mix-or-Match appliance. Perhaps a range or the one you need most. Let it set the color key for your kitchen ensemble. G-E colors can be combined smartly with white.



2. Paint to match. Specially created paints in all 5 G-E Mix-or-Match colors let you extend color schemes to walls, ceilings, cabinets, knicknacks. It's so easy to start with a little ensemble and make it "grow."

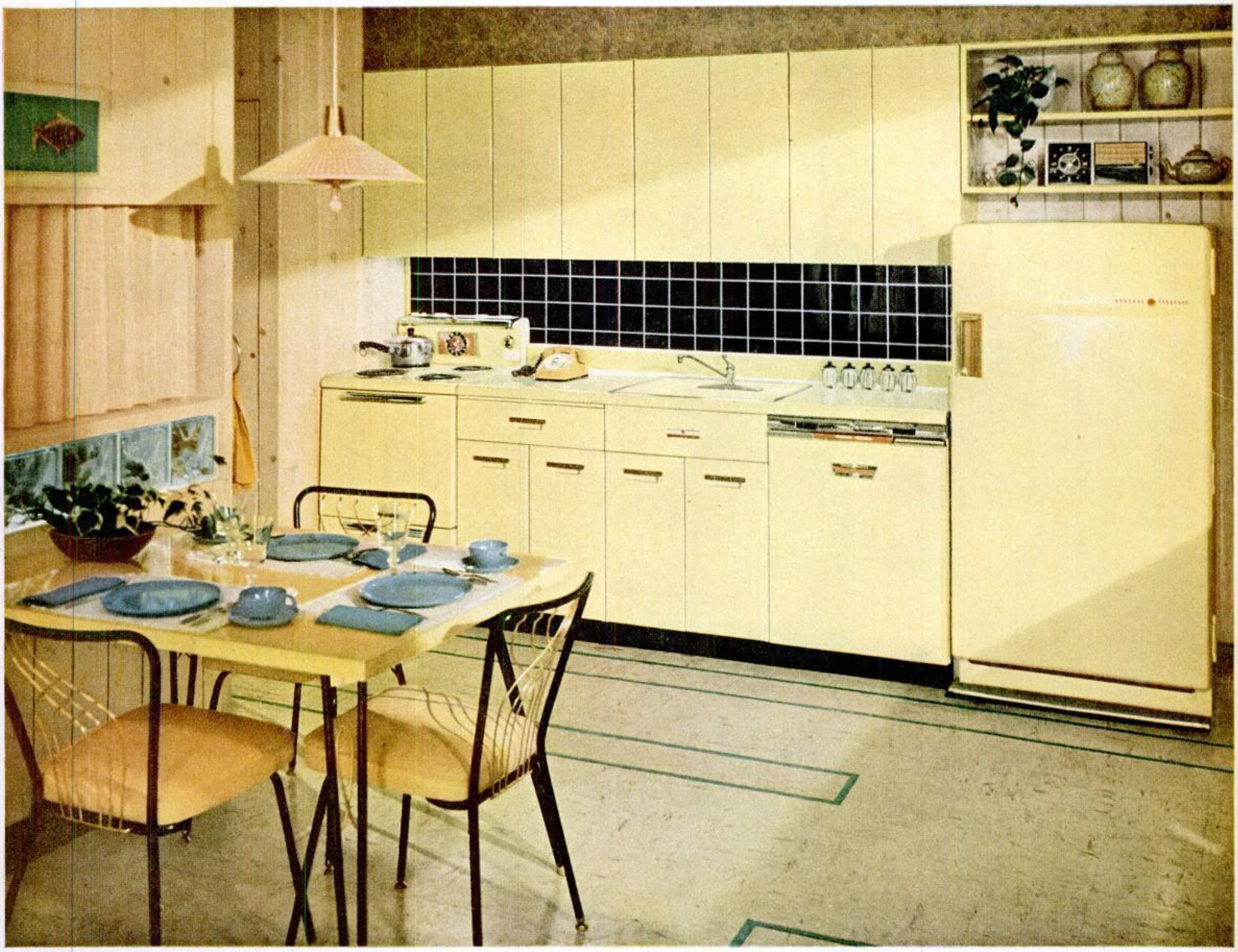


3. Add your own accessories. You can get fabrics, linoleums, countertops, furnishings, small G-E appliances in Mix-or-Match colors. Your G-E dealer will tell you where. Add more G-E appliances as you go along.

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...for as little as $26 A MONTH!*

KITCHEN OF MIX-OR-MATCH APPLIANCES TODAY. G-E PLANNING SERVICE, TOO!





"Young America" Kitchen . . . only $26.00 a month* . . . has stepsaving row of G-E work-savers. Spacemaker Range; Steel Base Cabinets; Food Disposall® Sink; Undercounter Dishwasher; 11-foot Revolving-Shelf Refrigerator; plenty of Wall Cabinets. Marproof countertop of brown and yellow G-E Textolite.® Your G-E dealer can fit your kitchen to your budget.

Revolutionary Unit-Wall Kitchen . . . about $55.00 a month.* New G-E appliance-cabinet groups actually substitute a wall! At left, refrigerator center has Undercounter Freezer and storage cabinet base. Stacked above are a 12-inch Cabinette and eye-level Wall Refrigerator. At right, sink center with G-E Base Cabinets, Food Disposall, single-control faucet, Undercounter Dishwasher, built-in Range Surface Units, waist-high Wall Oven. Cabinette and Wall Cabinets are stacked above.

*All prices based on credit terms under a Kitchen Modernization Plan available through General Electric Credit Corp. Installation and accessories additional. Prices subject to local variation.

Progress Is Our Most Important Product

GENERAL ELECTRIC

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Mothers!

Help your children have fun...make money, too!

Lemonade Stand Kit for only 35¢

and 2 can tops from Minute Maid Lemonade



Send For Minute Maid 11-Piece Kit—Includes Everything Needed to Set Up Money-Making Lemonade Stand

It's lots of fun for children to operate their own Minute Maid Lemonade Stand. And it's profitable, too. Boys and girls can make as much as $1.25 to $2.00 a day selling ice-cold Minute Maid Lemonade and Pink Lemonade. Easy to mix. And easy to sell. Everybody—young and old—loves these pure, wholesome drinks . . . so refreshing on a hot day.

The Minute Maid 11-Piece Kit furnishes everything needed to set up a real professional Lemonade Stand. You get colorful signs and pennants . . . price cards and budget book . . . a Minute Maid Salesman's badge, cap and apron . . . full operating instructions.

Encourage your children to operate their own Lemonade Stand this summer. It keeps them occupied . . . teaches them principles of sound business enterprise, too. Send for Kit today—see instructions at right.

Boys! Girls!

Here's How You Get Your 11-Piece Minute Maid Lemonade Stand Kit!

Send in 35¢ in coin and 2 can tops from Minute Maid Fresh-Frozen Lemonade with name and address. Complete 11-Piece Kit will be shipped without delay. Address: Minute Maid Lemonade Kit, Box 89, New York 13, N.Y.

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Offer good only in Continental U.S.A. Void wherever taxed, prohibited or otherwise restricted.

MINUTE MAID fresh-frozen LEMONADE made from Real California Lemons

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10,000 MEN TO A PLANE

Vast technological force supports today's test pilots

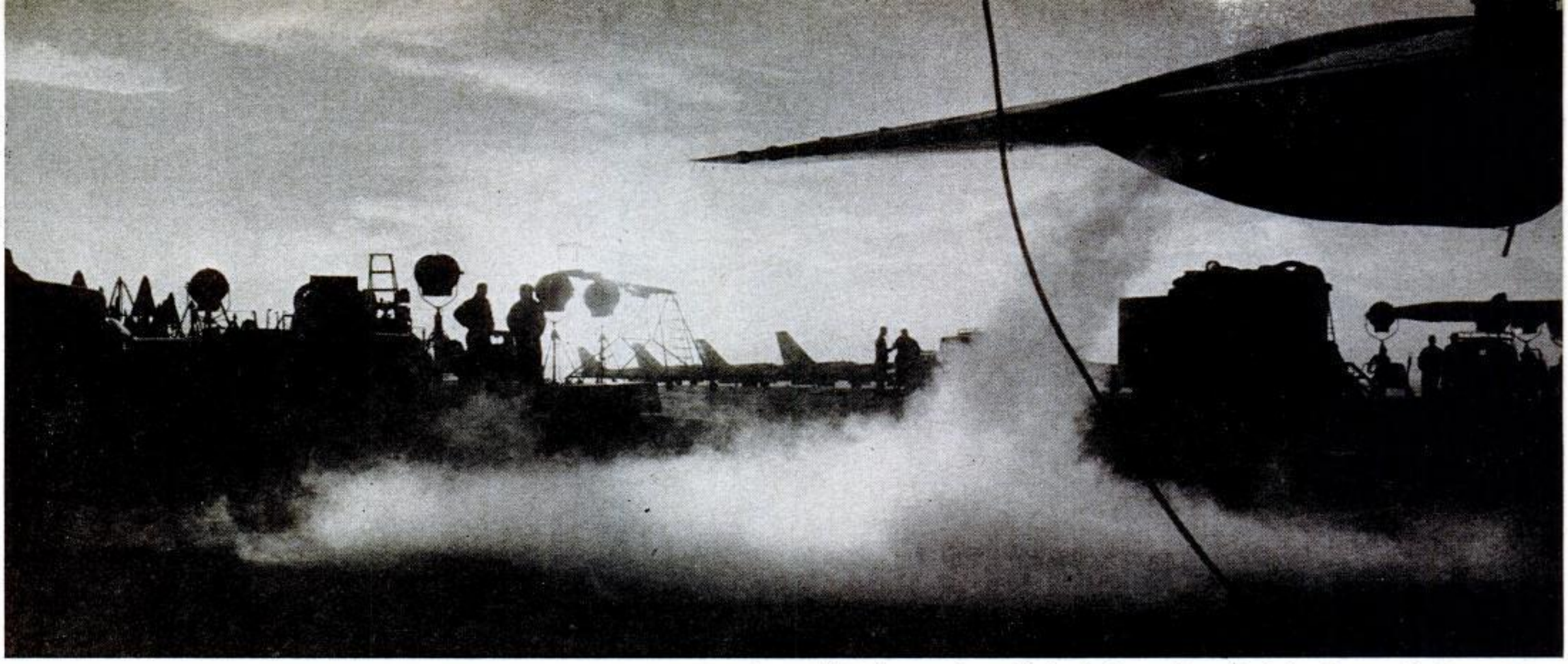
by ROBERT WALLACE

THE enormous national effort in the field of aviation is shaped like a pyramid. The broad base is composed of countless inconspicuous souls named Smith, who pay their taxes and hope the money does some good but are never really sure what goes on at the top of the pyramid. Above the Smiths are thousands of technologists, craftsmen and administrators and above these are the big government names like Eisenhower, Wilson, Quarles, Twining, and the big industrial names like Boeing, Curtiss-Wright, Bell. Ultimately the pyramid comes to a point, the summit of inquiry and hope, where there is room for only a handful of people. At this moment one of them is standing on someone else's shoulders thrusting a knife into the concave belly of the sky. The face is familiar but nobody can remember the name: Smith.

The national effort in military aviation reaches its summit at the Air Force Flight Test Center operated by the Air Research and Development Command at Edwards Air Force Base, Edwards, Calif. It is here, on a site that includes a 12-mile-long dry lake, that the fundamental question about the very latest, most promising airplanes—such weird-appearing craft as the X (for experimental)-3 shown above—comes up in the most naked terms: is it any good, or isn't it? The question is also fundamental to commercial aviation which progresses, to a considerable extent, through the bold experiments of the military.

Congress may authorize vast expenditures, may debate and investigate; the topmost military and civilian brass may formulate strategy; the finest

CONTINUED



MISTS ON THE RUNWAY swirl about in the early light of dawn as liquid oxygen escapes and evaporates while the ground crew fills the fuel tanks of the X-2. The test plane will then be hoisted into the belly of a specially designed B-50 which will take X-2 and pilot into the air and drop them for the test flight.

10,000 MEN TO A PLANE CONTINUED

engineers in the nation may design and execute fantastic things. But eventually all of the money, thought and work must be delivered to the Flight Test Center in the form of an airplane called the F-110 or the B-76 or some such. Then a few hundred men named Smith, or perhaps Francis J. Kelley or Auby Murrell or someone equally honorable and obscure, must fly the plane, take it apart and reassemble it and make the awful decision. This week the Smiths are evaluating aircraft that can mean life or death for the nation three or five years hence. How does it go with them? Are they comfortable, satisfied, do they need another wrench, and where is Edwards, Calif.?

For men seeking a means of getting to the moon, as some of them are doing, Edwards is an excellent training ground. Glancing about, they can believe they are on the moon already. The base lies on the edge of the Mojave Desert about 100 miles northeast of Los Angeles. Along the horizon from northwest to southeast lies a long curve of mountains with a lunar look: Tehachapi, San Gabriel, San Bernardino. The earth of the desert is the color of light brown sugar, supporting a feeble cover of gray-green sagebrush and greasewood bushes. A constant sand-laden wind blows across the base, leaving sand drifts around fixed objects and licking the paint off houses and automobiles.

All around the base, and on it, stand Joshua trees, the strangest growths on the continent. Their thick, scabrous trunks, the clefts inhabited by small lizards, extend straight up for perhaps 10 feet, then branch into a number of grotesque, crooked arms tipped with finger-like leaves. The arms appear to be gesticulating, beckoning, waving on toward something of great but undefined importance. John C. Frémont, the first explorer who ever made written note of them, called them "the most repulsive tree in the vegetable kingdom." They have a suffering, fleshy look; one feels that under the blows of an ax they might groan. They are very old but, because their growth does not take the form of concentric annual rings, no one knows how old. Some of the big Joshua trees at Edwards could have been growing there in the time of Christ and Judas. Melancholy, ancient, strangely disturbing, they seem mournfully warning or mournfully encouraging to different eyes.

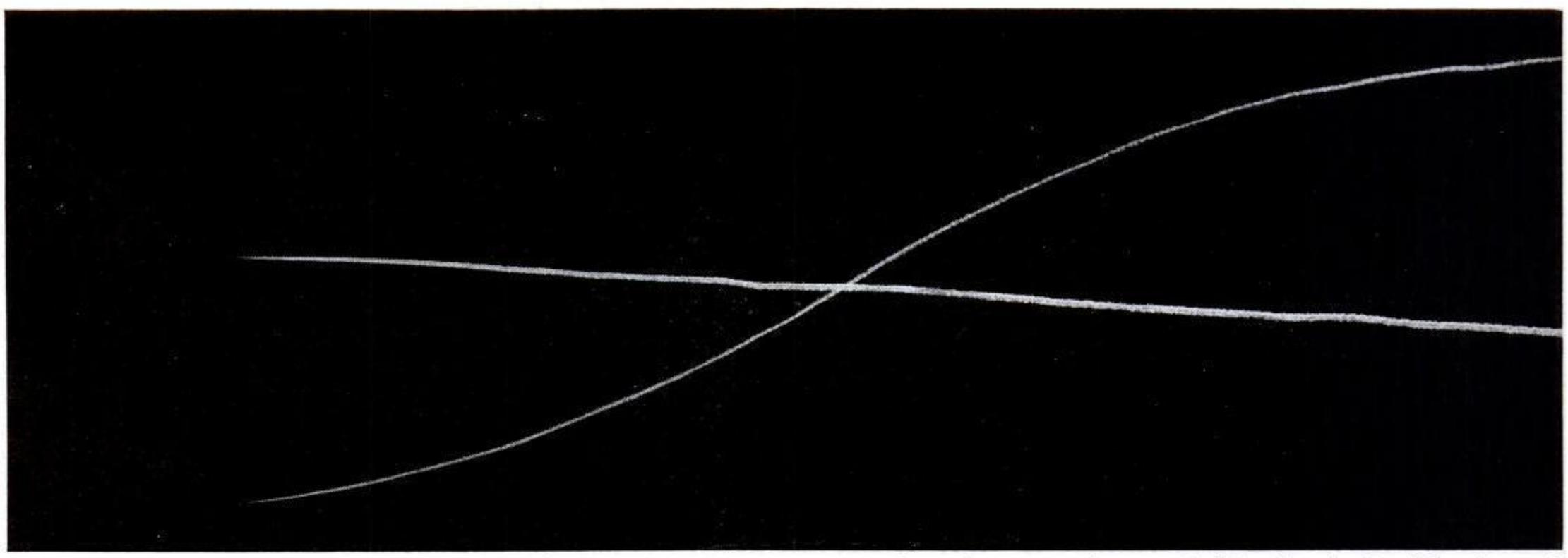
The remoteness of the area is a reason why the Flight Test Center is located there: fewer curious people will see the strange shapes in the sky there than elsewhere. A second reason lies in the fact that the clear desert air is suitable for flying 350 days a year. The big reason, however, is that within the 300,000-acre base there is a unique national asset called Rogers Dry Lake.

The dry lake, previously known as Muroc after a small desert village which the base has swallowed up, is the world's largest and finest natural landing field. Sixty-five square miles in area, its surface is dead level and very nearly as hard as stone. A fully loaded heavy bomber can land on the lake bed and leave only faint tire marks. There are no obstructions on it, not even pebbles, it being composed entirely of earth as fine-grained as face powder. Two or three times a year, when a half inch of rain falls on the surrounding desert, the lake fills with the runoff to a depth of perhaps a foot. Then the ceaseless, shifting winds push the water back and forth across the broad flats, resurfacing and sealing them. Normally, the lake bed is not used for test landings, but remains constantly ready as a life-saver for pilots who get in trouble upstairs. In the 10 years since the base has been a jet and rocket research center the lake bed has saved innumerable lives and, at last count, more than $400 million worth of aircraft. But even 65 square miles may not be enough landing space for some new aircraft under some conditions. Currently the Air Force is planning to connect Rogers Dry Lake with a nearby, similar lake called Rosamond. When this is done, there will be an emergency runway 22 miles long.



DESIGNER of plane, R. G. Lapp, watches it in action.

CONTINUED



CONTRAILS ACROSS THE SKY show the course of the X-2 and the F-100 chase plane. Straight contrail is left by the X-2 which, after having flown under power of its rocket, is now slowing and gliding for a landing. The other track is made by the chase plane swooping to shepherd the X-2 down to the dry lake.

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Just pour your shortening
—delicate Wesson Oil





No digging out shortening. Wesson Oil is instantly ready when you are—convenient and easy to *pour* for good frying. Wesson is instant shortening with all the matchless delicacy of finest salad oil.



No waste with Wesson—it's thrifty. You fill your fryer just to the depth you need. You *see* when Wesson reaches the proper level. It's sparkling pure liquid. There's no waiting for it to melt.



Safer for digestion. Even costliest solid shortenings smoke at 380°. Wesson heats far higher without smoking or burning. So you're surer always of digestible fried foods with fresh, good taste.



Delicate salad oil makes the finest shortening—Wesson® Oil

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Only with Fresh Stick is this possible !

The full strength anti-perspirant you can use any time...even after shaving.



FRESH scientists discovered it — the **new patented ingredient combination** that made all this possible. You get it in New Fresh Stick.

New Fresh Stick gets underarms dry, really dry, in seconds . . . **ends all danger of perspiration and odor.** And still it's safe for normal skin, no matter when or how often you use it. In addition, it's the only one that goes on dry, invisibly, without any greasy or runny messiness.

In New Fresh Stick you use this highly effective formula **full strength.** Yet, it's so gentle, so mild you can actually shave your underarms first and use it immediately afterward. Something that other anti-perspirant creams and sticks caution you against—but not New Fresh Stick. In fact, New Fresh Stick helps guard against after-shave infection because **it's actually antiseptic.**

Ever hear of anything like it? It's the newest—and greatest for daylong protection.

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DESERT'S LANDMARK, a Joshua tree, stands at entrance to Edwards base and is imprinted on sign. Edwards is Air Force's second biggest installation.

10,000 MEN TO A PLANE CONTINUED

Because of its natural assets, Edwards Air Force Base has become the scene of a number of other activities which are not directly related to its primary purpose, wringing out new planes. There is a railway track down which rocket-powered sleds are fired at speeds of 800 miles an hour—and up. Attached to the sleds are various objects—tails, wings, bodies, parachutes, streamlined shapes—which the Air Force desires to test in motion.

There is a somewhat smaller and slower track on which men, instead of equipment, are rocketed across the desert. It was on such a track that a very brave man named Colonel John Paul Stapp (LIFE, Jan. 3, 1955) subjected himself to a sudden stop while traveling at 632 miles an hour, collecting some valuable physiological information and two black eyes which lasted a month. (When Stapp stopped, his eyeballs tended to continue.) A memorable journey on the Edwards track was once made by an uncooperative ape. The ape objected to being strapped onto the sled and was quieted by a technician who gave him a banana. No sooner had the ape begun to eat the banana, however, than he found himself a half-mile down the desert with the fruit smashed all over his face. Shortly thereafter, trying a similar experiment with the same ape, the technician gave him a second banana. The ape hit him over the head with it.

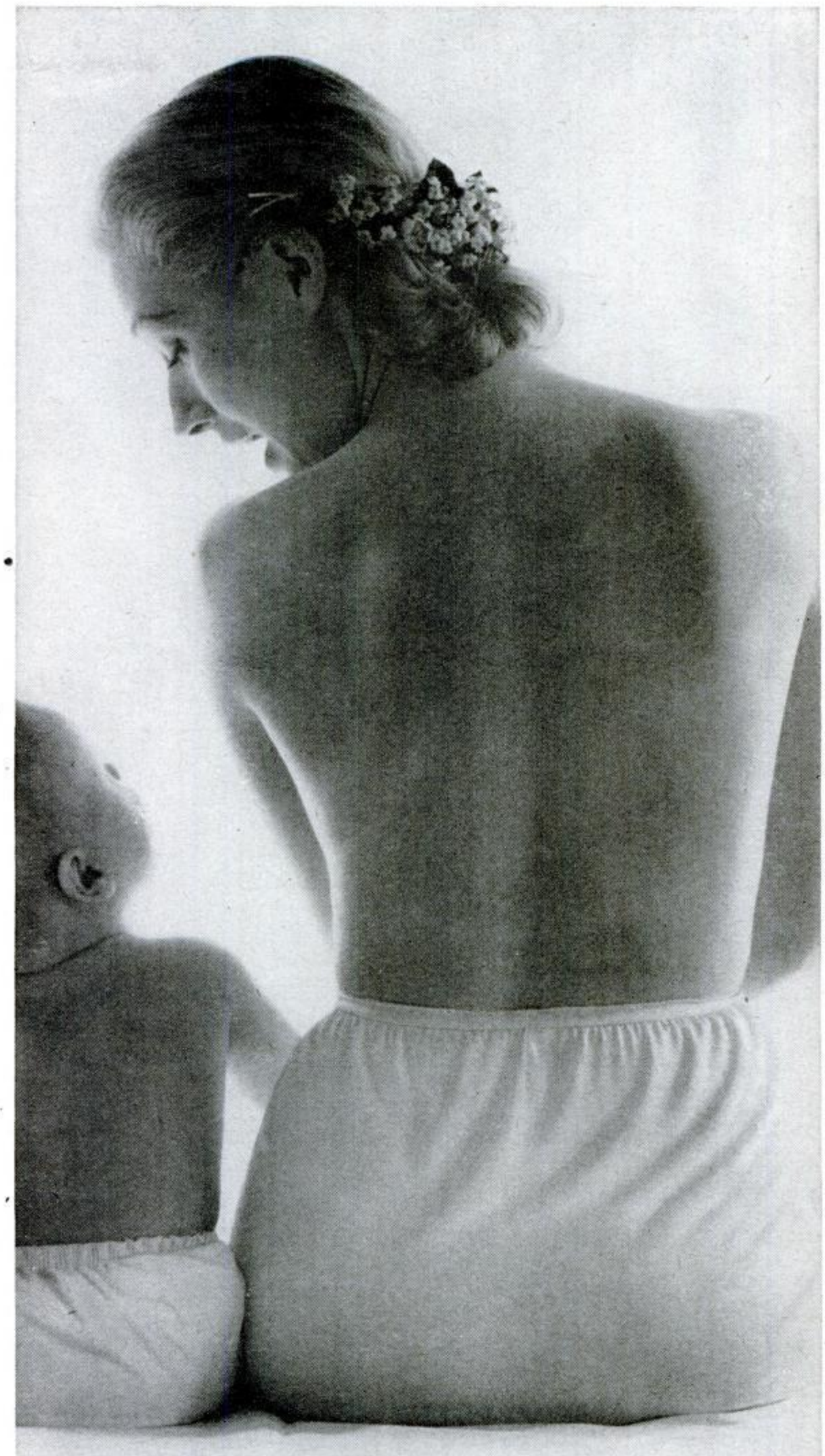
Elsewhere on the base, in a particularly lonely, lunar spot called Luehman Ridge, stand some enormous steel-and-concrete racks on which rocket engines are tested. They rise from the side of the ridge like Gothic battlements shimmering in the dry, gusty air, ponderously heavy, designed to clasp and restrain huge bellowing rockets which may be as large as two freight cars end-to-end. When the rockets are test-fired the noise can be heard for miles across the desert. As they struggle to break loose from the unyielding grip of the racks, terrible blasts of blue-white fire shoot down the side of the ridge, striking curved concrete deflectors below. To cool the concrete, thousands of gallons of water are poured across it during the firing. Away from the bottom of the ridge, winding erratically across the desert among the Joshua trees, a huge eroded gully leads off to nowhere.

Four governmental agencies and 20 aircraft companies conduct operations at Edwards, some having only liaison personnel on hand while others perform basic research. The Bell Aircraft Corporation, for example, flies its famed rocket planes, such as the X-1 and X-2, at Edwards. The X-1 first broke the "sound barrier" in 1947; currently the X-2 is approaching the "thermal barrier," a point in the high-speed range where first the pilot and then the airplane itself may be expected to burn up. Both Bell and the pilot, the latter in particular, are advancing with some caution. They expect to reach the barrier somewhere beyond 2,000 mph and have already made considerable progress. The Air Force announced 29 months ago that a rocket plane had hit 1,650 mph, and the project has not, by any means, been at a standstill since then.

The Flight Test School of the Air Force is also located at Edwards. There are trained some of the best test pilots in the world. Advances in technology, having made the once remarkable planes of World War II obsolete, have done the same for the old-fashioned test pilot. His job no longer consists in taking an airplane up to 50,000 feet, diving straight down, and noting whether or not the wings fall off. The modern test pilot must still be a superb flier but he must also now be a well-qualified engineer.

When a new plane is test flown it may carry as many as 200 instruments which record or transmit, in a single flight, enough

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Panties of Spun-lo rayon fabric have the Knit with the Fit where you Sit. First choice for comfort, they g-i-v-e with every motion, are naturally absorbent...never feel clingy or clammy! In all styles, only about 69¢

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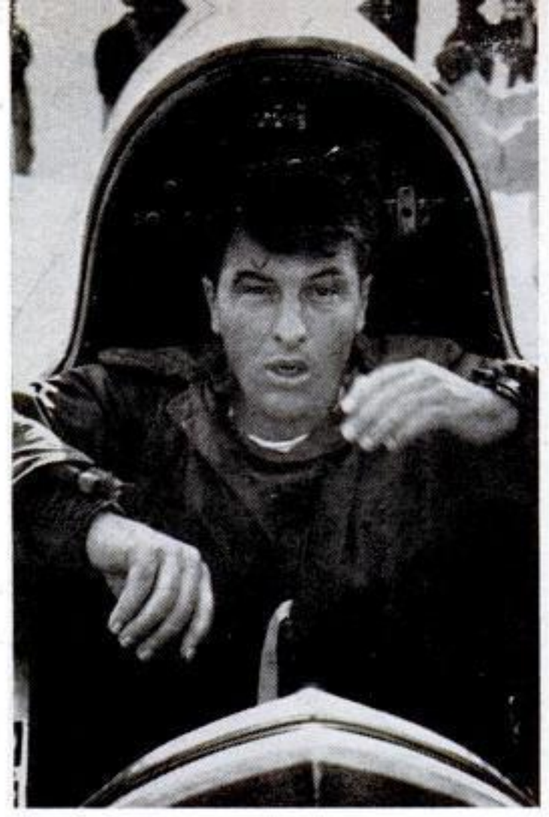
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TEST PILOT'S TENSENESS shows on face of Lieut. Colonel Everest as he prepares to fly X-2. He dons special suit (*left*), then walks musingly toward plane.

Few minutes after landing (*third from left*) he is still recovering from effects of tremendous speed. But he soon relaxes and exuberantly describes the flight.

10,000 MEN TO A PLANE CONTINUED

information to fill a fat textbook. In training its test pilots at Edwards, the Air Force puts them through a course of instruction which provides, in six months, the equivalent of the final two years of a college engineering course. Any Air Force pilot may attend the school—if he meets a few minimum requirements. He must be between 25 and 33, have a rank no higher than major, be a pilot on flying status, have a minimum of 1,500 hours of diversified flying time, and possess a current familiarity with algebra, plane geometry, differential calculus, theory of flight, aeronautical mechanics and aerodynamics. A leather helmet, a pair of goggles and a long white scarf will do him little good.

All of the foregoing activities at the summit of the pyramid, plus several dozen others not mentioned, are conducted by about 10,000 men. Of these only 3,500 are Air Force personnel, the others being employed by the U.S. Civil Service, by construction contractors and by aircraft or other companies such as General Electric, Minneapolis Honeywell, Westinghouse and RCA. In the great technological welter, each man is certain only of what he and his immediate neighbors are doing. On a given day, a pilot in a rocket plane may travel faster than any man in the world has ever traveled, and 9,950 other men will know nothing whatever about it. Through the closely guarded gate of the base a trailer truck may crawl, carrying something large under canvas. It could be part of an earth satellite, an electronic brain, a load of baboons, a tank of liquid nitrogen, or the only machine tool of its kind in North America. Who knows? About 9,975 men do not.

Airplanes, like automobiles, sometimes have flat tires. Who fixes the flats? On the immense organizational chart of the Air Force Flight Test Center there are 125 separate boxes, each representing an office or function. The large box at the top, labeled "Commander," represents Brig. General J. S. Holtoner, who does not fix flats.

To find the man who does, one must proceed downward from Holtoner's box, past 15 others, turn right, then left at the box labeled "6515th Maintenance Group." Passing through this box, one goes straight past the Headquarters Squadron Section, the Administration Office, the Production Control Office and the Technical Inspection Office, makes a sharp right turn and then a left, entering the box labeled "6515th Field Maintenance Squadron." Going out the bottom of this box, one passes the Squadron Headquarters Section and the Electronic Section and makes a sharp left turn into the Manufacture and Repair Section, headed by Captain John R. Nelson. Nelson does not fix flats either.

However, Nelson does have a smaller organizational chart which shows that his particular box is broken into 20 little boxes, including one belonging to T/Sgt. R. M. Porter, noncommissioned officer in charge. Porter does not fix flats either. However, beneath his box are eight others, the last one being Tires and Wheels. Here, presumably, there will be a man who does fix flats, which turns out to be the case. The man's name is Smith, Douglas S., airman first class.

"Yes," Smith says, "I sure do. I have been changing airplane tires for 12 months from 7:30 a.m. to 4:30 p.m. five days a week." This is a tedious, tiring, filthy and, although one may not at first believe it, dangerous job. It takes Smith four hours to change a tire, or, as the supply catalogue calls it, a casing, aircraft, low-pressure, 30-ply, 25.00x28 type III, list price $861.

This particular tire, used on B-36 aircraft, weighs 150 pounds, not counting the heavy metal wheel, and Smith has to have help to handle it. However, he would rather change this one than various others because it happens to be a soft tire that carries only 150 pounds of air pressure per square inch when properly inflated. (Automobile tires carry about 30.) High-pressure tires carry as much as 300 pounds per square inch. When he inflates these, Smith first rolls them into a small steel cage made of heavy metal mesh backed up with steel bars about two inches in diameter. Then he crouches beside the cage, attaches the air hose and opens the valve. If the tire is sound it will not explode. If it has some defect, however, it will explode. Probably the steel cage will protect Smith from the flying fragments of rubber and steel. If not, Smith will be sent back to his home in Hinton, W. Va. in a casket, steel, bronze finish, type IV, list price $276.

Brave men behind the brave pilots

SMITH does not know anything about the rocket plane, the X-2. Nobody consults Smith on this subject. Sometimes, a week or two after the X-2 has made an experimental flight, he hears about it, but that is that. When the X-2 is flown, it is fastened to the belly of a four-engined B-50, which ascends to an altitude of several miles and drops it. After a moment of free fall, the pilot in the X-2 starts his rocket engine, zooms up to a certain altitude, achieves a certain speed and then comes down again, his fuel exhausted. He glides in to a landing on the lake bed at about 300 mph, skids for two or three miles, and stops.

The pilot of the X-2 during many flights has been Lieut. Colonel Frank Everest, a man of courage and skill, to whom the nation is in debt, as it is to the pilot of the X-1, Major Charles Yeager. Both Everest and Yeager have become properly famous. But there are other brave men involved with the X planes of whom no one has ever heard.

Before the X-2 is flown, its engine is tested on the ground. The engine runs on liquid oxygen and alcohol and is an exceedingly dangerous contrivance. When it is time for the test, the X-2 is securely fastened down and everyone who is not absolutely obliged to be in the neighborhood goes away. The engine may explode, or perhaps spring a big leak, spraying a bystander with liquid oxygen. This can freeze him quite thoroughly, its temperature being minus 297° F. (Not long ago a technician in one of the laboratories at Edwards quick-froze a small snake with liquid oxygen and tapped the snake with a hammer. It shattered into dust.)

Setting these possibilities aside, one man walks up to the X-2 and puts his head into an opening in its flank, where he can watch the engine running. His name is Smith, William M., aged 48, from Buffalo, a civilian who works for the Bell Aircraft Corporation. His ears are tightly plugged and he usually wears a helmet. The engine makes a monstrous noise, 150 decibels, 25 more decibels than a man can supposedly tolerate. While the engine runs, Smith looks for leaks in the plumbing. If there is a serious malfunction of some sort it will not make much difference to Smith because, although his body will still be standing beside the X-2, his head will be well on its way over the desert toward Boron, a distance of about 20 miles as the head flies. But if there is just a small leak Smith will live to tell about it and corrective measures will be taken.

After the test Smith walks unsteadily away from the plane. The noise has made him ill; he is at the stage in nausea where he would like to vomit, but can't quite. At this point, if someone says, "Mr. Smith, why do you do this?" he gives the only answer he can think of: "Well, somebody has to."

Smith knows a good deal about rocket engines but approximately nothing about yaw and angle-of-attack indicators, called YAPS in short form, which are attached to supersonic aircraft during flight tests. A YAPS is an instrument about the size of a flashlight, from which two small brass vanes protrude. The vanes, with their systems

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Schweppes discovers America—and vice versa!

IT SEEMS like only yesterday that Commander Edward Whitehead, Schweppesman in charge of enlightening un-Schwepped regions, first set foot on our shores.

Americans tasted Schweppes delicious bitter-sweet flavor. And discovered Schweppervescence —those exuberant little bubbles that tickle the palate and delight the soul.

Soon it became practically *unconstitutional* to mix a Gin-and-Tonic *without* Schweppes.

"Now, not content with coining a brand new language," says the Commander, "I find you Americans are coining new *drinks*. Well, good for you — I've just tasted my first *Vodka*-and-Schweppes, and I must say it's not bad."

Many cities now report a distinct groundswell for *Rum* or *Bourbon* mixed with Schweppes. And Schweppes is also being hailed as a great soft drink—delicious without *anything* added.

Thirsty reader, however you take your Schweppes, you can be certain of two things: First, that the Schweppervescence will last your whole drink through. And second, that you are drinking the original and authentic Quinine Water. Famous since Commander Whitehead's great-great-grandfather was a midshipman.

P.S. If your storekeeper — or favorite bar — does not yet have Schweppes, drop us a card and we'll take the necessary steps. Address Schweppes, 30 East 60th Street, New York City.



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In Mid-Air...
In All Its Fire, Flesh And Fury!

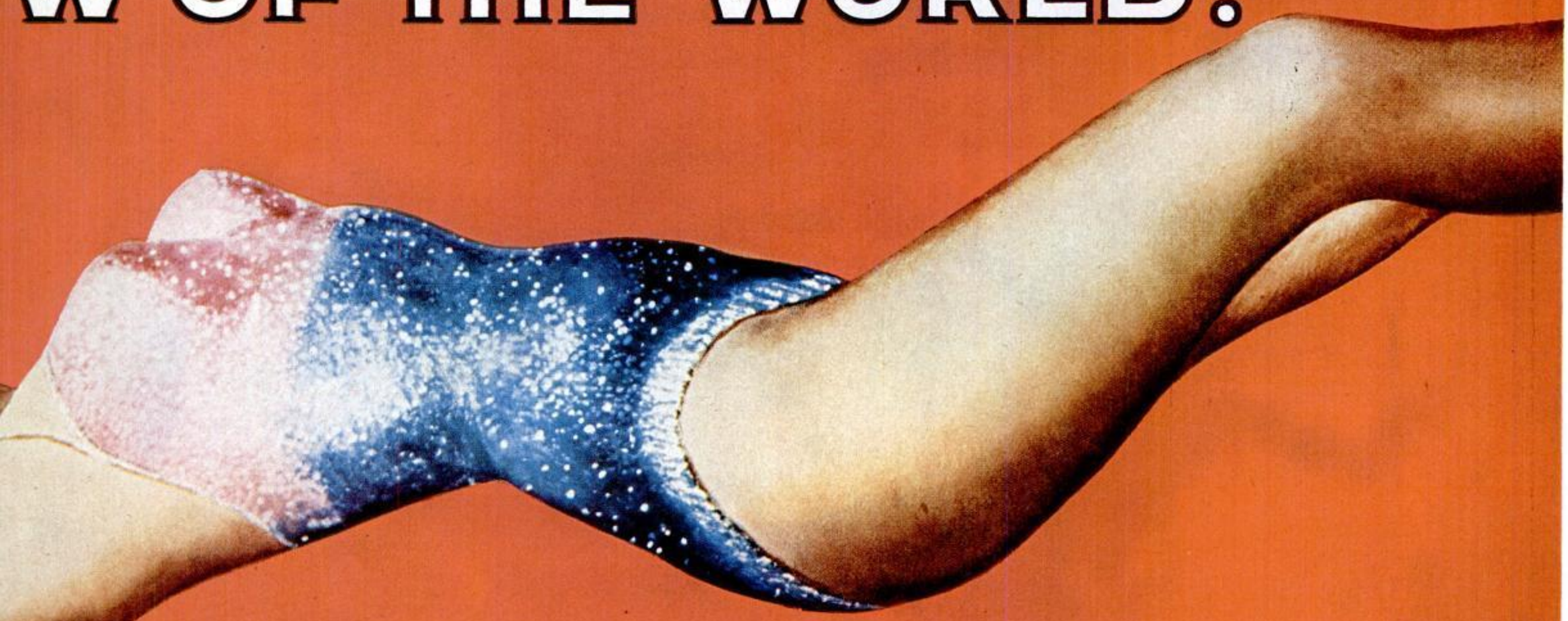
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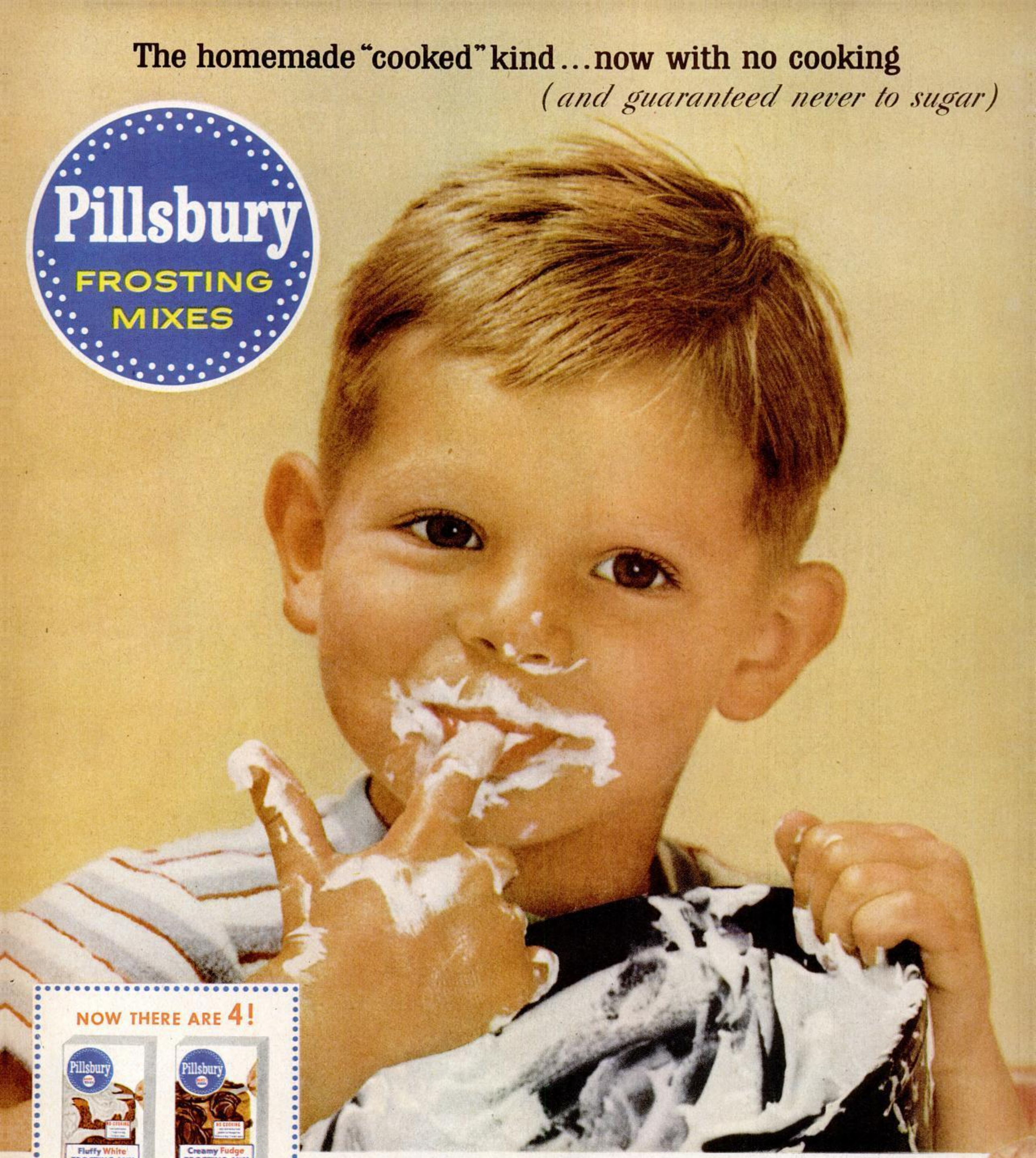
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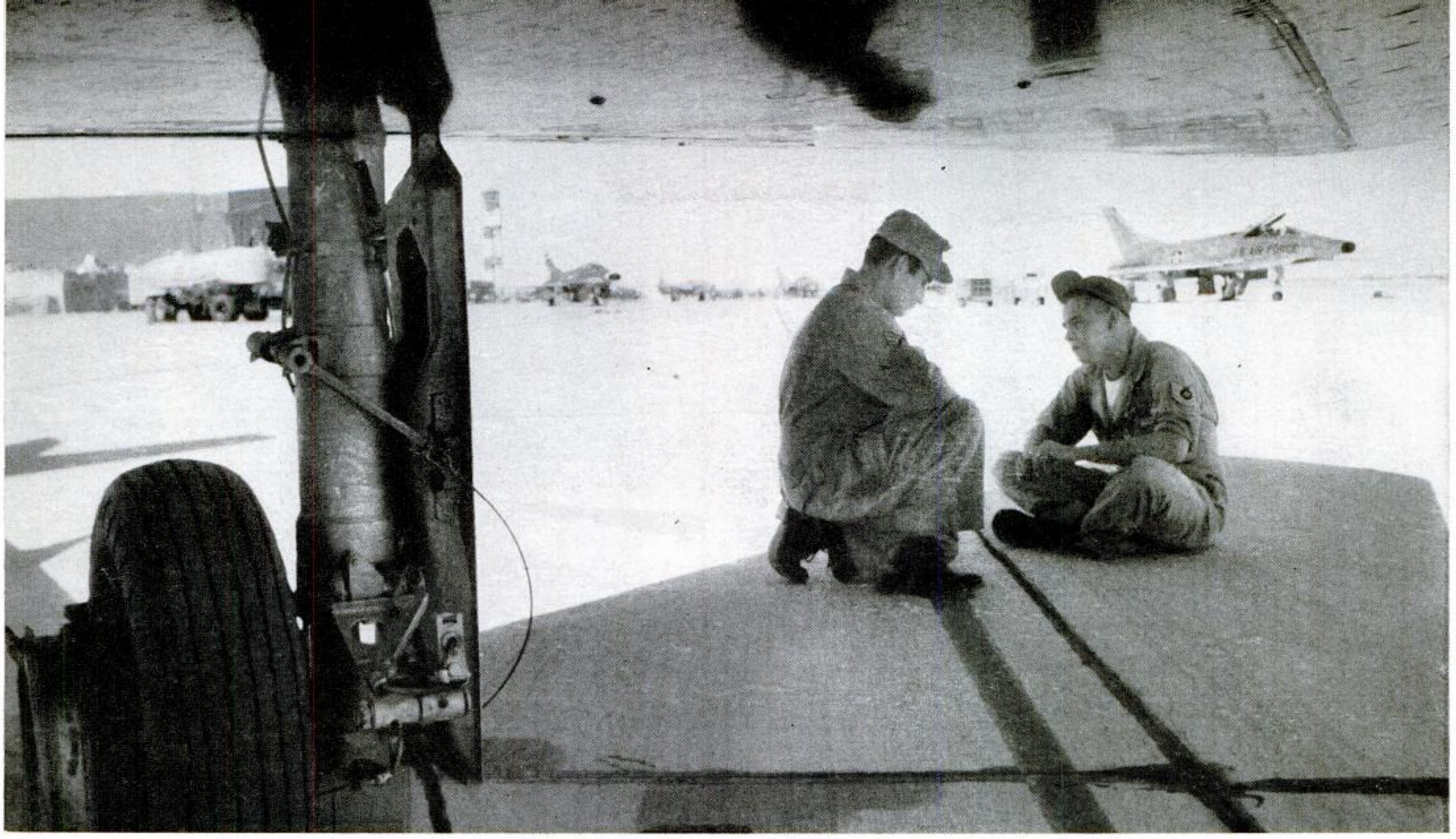
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ALL YOU ADD IS WATER



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FLIGHT CHIEF FRANCIS J. KELLEY (RIGHT) SITS UNDER THE WING OF F-86, FOR WHOSE WELL-BEING HE IS RESPONSIBLE, AND INSTRUCTS ONE OF HIS CREWMEN

10,000 MEN TO A PLANE CONTINUED

of shafts and gears, register the angles of vertical and horizontal deviation as the plane flies, or "attacks" the air.

There is a 24-year-old craftsman at Edwards who has spent the last five years of his life working on YAPS, and who is by no means finished with the job. His name is Robert Hawn. He does not often see the supersonic aircraft in flight, usually does not know when one of his YAPS is being used. He works in a laboratory where even the sound of passing planes penetrates only faintly. But the instrument that he has made is in one sense the spearpoint of the whole effort. In flight it is the first part of the front end of the forward tapering tip of the plane to strike the air.

Craftsman Hawn, rocket-engine Smith and tire-changing Smith all have at least something to do with aircraft. There are innumerable others at Edwards who are incessantly busy but who glimpse a plane rarely, and who even then do not know whether it runs on liquid oxygen, gasoline or Seven-Up. The second busiest man on the base, after the chief of the operations tower, is probably a doctor, Captain Andre Renaud. Captain Renaud's specialty is not emergency surgery. Although Edwards itself and many of its streets—Wolfe, Popson, Gregorious, Forbes, Seller, Bailey, Payne, Methusa, Sparks, Mortland, Lathrop—are all named after test pilots and crew members who lost their lives there, plane crashes are relatively rare. Far more men are killed in local automobile accidents than in plane crashes. Captain Renaud's specialty is obstetrics.

At Edwards, as at U.S. military establishments throughout the world, the birth rate is astonishing. Only the wives of military personnel may use the maternity ward at the base hospital and of these there are only about 1,500. But in 1953 they produced 314 children. In 1954 they produced 357. Last year the figure was 432. This year it will be nearly 600. "Of course I do not know exactly why this should be so," Captain Renaud remarks with a Gallic shrug, "but they are all young, and what is there to do in this place?" The average age of Captain Renaud's maternity patients is 20½ and they are all in excellent health. Captain Renaud himself has three children with a fourth on the way.

The third busiest man on the base, very likely, is the post exchange officer, Captain Walter A. Godfrey. His gross business is $1 million a year. On payday, customers are lined up two deep at the counters of the PX. They buy model-airplane kits in enormous number, enough to build 33,000 planes a year. Relatively few of the kits are sold to the children of the base, who are bored with airplanes. Most of the purchasers are adults, whose jobs are so specialized that their best chance of seeing a whole F-104 up close is to make one.

A considerable number of men at Edwards are involved in housekeeping, which is not a routine task but an active struggle against environment. Their problem is to keep the base from blowing away, to find means of holding down the sand. During severe storms the 40-to-80-mph winds pick up countless tons of sand and drop it on roads and runways and against the sides of buildings. Sand forces its way through the cracks around doors and windows, ruins valuable

CONTINUED



YAPS, instrument which measures the plane's yaw and angle of attack, was perfected by Robert Hawn.



ENGINES are tested by William Smith. He wears ear guards as protection against deafening noise.



TIRES are inflated by Douglas S. Smith, who has to place them in a cage in case of a violent blowout.

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HEIRS APPARENT to today's test pilots are chase-plane pilots (*from left to right*), Captain Ivan Kincheloe, Major Stuart Childs, Captain Milburn Apt.

10,000 MEN TO A PLANE CONTINUED

equipment, gets into food and clothing. To combat it, maintenance men erect snow fences, but the sand seeps through them. They plant cover crops, but the abrasive wind cuts the sprouts off at ground level. They spray the ground with dust-binder, which produces a satisfactory but only temporary crust.

In one corner of the base the maintenance men by great effort have created a football field with a fine cover of grass. The sprouts have survived the wind, the grass is mature and one would suppose that watering and mowing would be the only problems remaining. But the field, a green island in a sea of brown sugar, must be defended like an island. At night, hopping silently out of the desert, the jackrabbits come to devour the grass down to the roots.

The football field is equipped with lights for night games. Not long ago the members of the Edwards Rod and Gun Club, about 100 strong, assembled at the field after dark with their shotguns. Silently they lined up along one goal line and one side line of the field and then at a signal the lights were turned on. In one volley, 450 jackrabbits fell dead.

In sum, Edwards Air Force Base is an extraordinary composite of wind and sand, hot, glaring space, jackrabbits and Joshua trees, great noises and plumes of smoke, babies and rockets, model airplanes, liquid gases and apes on sleds and tires in cages. But somehow its primary purpose, the testing of new planes, is accomplished, and accomplished with dedication and skill. Among the 10,000 men there appears to be a most powerful sense of responsibility. Each man's job, no matter how specialized or how remote from the flight line, fits ultimately and neatly into the general purpose. It is always possible that one mistake, whether it is made by a typewriter repair man or a truck driver or even a PX clerk, can through some horrible chain of circumstances lead to the loss of a man's life. The sense of responsibility can be felt everywhere, growing stronger and stronger as one approaches the relatively small group of men who actually maintain and fly the planes.

Technical Sergeant Francis J. Kelley is a flight chief, responsible for the maintenance of eight F-86 fighter planes. Under him are 16 men, two to a plane. The F-86s are not of course undergoing tests, having been in service in the Air Force for some years. They are used as "chase" planes: when a new aircraft is tested, one or two F-86s will follow it very closely through the air, their pilots radioing observations and advice to the test pilot.

"When I first moved into this job," Sergeant Kelley says, "I used to get up in the morning, have breakfast, kiss my wife goodby and drive down to the hangar. I'd park my car in the lot, get out of the car, and puke on the ground. Then I'd go into the hangar and go to work."

Sergeant Kelley is a highly skilled mechanic. Whatever there is to know about an F-86, Sergeant Kelley knows. He also knows that if one of his 16 men makes a mistake, a pilot will die. For his skill, for the preservation of the lives and the $2.5 million worth of aircraft entrusted to him, for puking on the ground, the nation pays Sergeant Kelley $198.74 a month.

"About half my 16 men are still green," Sergeant Kelley says. "They've got a lot to learn. But I've got seven real good men. And do you know what, by God, is going to happen? Five out of the seven are quitting next month. Their enlistments are up. One of them is going to drive a taxi, a damned taxi in Milwaukee. I could cut my throat."

It costs $16,000 and takes many months to train a jet aircraft mechanic, but as soon as his four-year enlistment is up, he quits. As it happens, 89% of the men in the Air Force quit after four years, taking with them billions of dollars of the nation's money.

CONTINUED

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"I don't blame the guy," Sergeant Kelley says. "He's got a family, can't support them on what the Air Force pays him. They won't pay him what he's worth. Outside, he can make a good living. But it's not only money, it's other things too."

By "other things" Sergeant Kelley means the generally shabby treatment the Air Force—and the armed services as a whole—have received since World War II. Always underpaid, military personnel once had at least a small tax break—enlisted pay and the first $1,500 of officer income was tax free—but in 1948 Congress took this exemption away. At many military bases, although not at Edwards, married men and their families are obliged to live in dilapidated shacks for which civilian landlords charge excessive rents. At one time, by purchasing at discount in commissaries and post exchanges, military personnel could stretch their small incomes. Now all of the "fringe benefits," which once made military life more palatable, have been taken away. Nonetheless, when Sergeant Kelley's five good mechanics leave him, he will train five others, and he will continue doing his job because he likes to work with jet aircraft and because he loves his country.

The pilots who handle the aircraft, both the chase planes and the new models, are in somewhat the same situation as Sergeant Kelley. When the X-1 was ready to make its flight through the sound barrier, the Bell Aircraft Corporation looked around for a civilian test pilot to do the job. No civilian would take it, even for a rumored $150,000. Thereupon the X-1 was flown through the sound barrier by Captain Charles Yeager, who did it for the challenge it offered and for $6,138 a year ($4,620 salary and maintenance, $1,518 flight pay).

However, the pilots are otherwise compensated. The sheer love of flying suffices for most of them.

A few test flights are exciting and dangerous, because no matter how much work has been done on the drawing board and in the wind tunnel, and no matter how sure the engineer is that the thing will fly, only the pilot can finally determine this, at risk to his life. But most of the test flights are more or less routine. New planes are put through a lengthy, methodical series of tests for as long as six months while filing cabinets are filled with reports and statistics. Rarely, perhaps three or four times a year, a test flight becomes highly eventful, and a pilot has a street named after him.

The deadly parachute

AT least 99% of the thuds and explosions and billows of smoke on the desert are the result of planned, normal exercises in which no one is hurt. But plane crashes do happen, usually to some obscure soul whose name means nothing when it appears in the newspapers on page 26 next to the item about the triple-yolk egg. Here is the story of one crash:

The mission was an odd one. Because jet fighters land at high speed, many of them are equipped with drag parachutes to slow them down. The parachutes are opened after the plane's wheels touch the ground. But in this case, the intention was to open the drag parachute at an altitude of 20,000 feet, to see what would happen. If the plane could be suddenly slowed in mid-flight, it was thought, the maneuver might have some value in aerial combat.

A captain named Richard J. Harer was assigned to make the test in an F-94C capable of flying 600 miles an hour. The plane was equipped with a manual release, so that Harer could get rid of the parachute after the test. In the event that the manual release failed, Harer could get rid of the parachute by detonating a small explosive charge which was wired to the rope that secured the parachute to the plane. If both of these devices failed, Harer could still get rid of the parachute by going into a dive and maneuvering the parachute into the blast of flame from his afterburner. In sum, a thoughtful arrangement of affairs.

Harer got into his plane and took it up to 20,000 feet, closely followed by a chase aircraft flown by another captain named Milburn Apt. Harer opened the parachute, began to tumble crazily across the sky and then—as far as anyone knows—must have tried the manual release. It failed. Then, because he was a cool, skillful pilot, Harer must have kept his head and tried the explosive charge, although no one is sure what he did. In any case, the charge did not explode. By this time Harer was plummeting out of control toward the dry lake bed at perhaps 500 miles an hour, with Captain Apt flying right beside him shouting advice over the radio. Harer's plane continued down, wallowing, gyrating, the deadly parachute never quite getting into the flame of the afterburner. Harer crashed. His plane burst into flames.

Captain Apt landed on the lake bed at almost the instant of the crash. The two planes, one burning, one under control, skidded

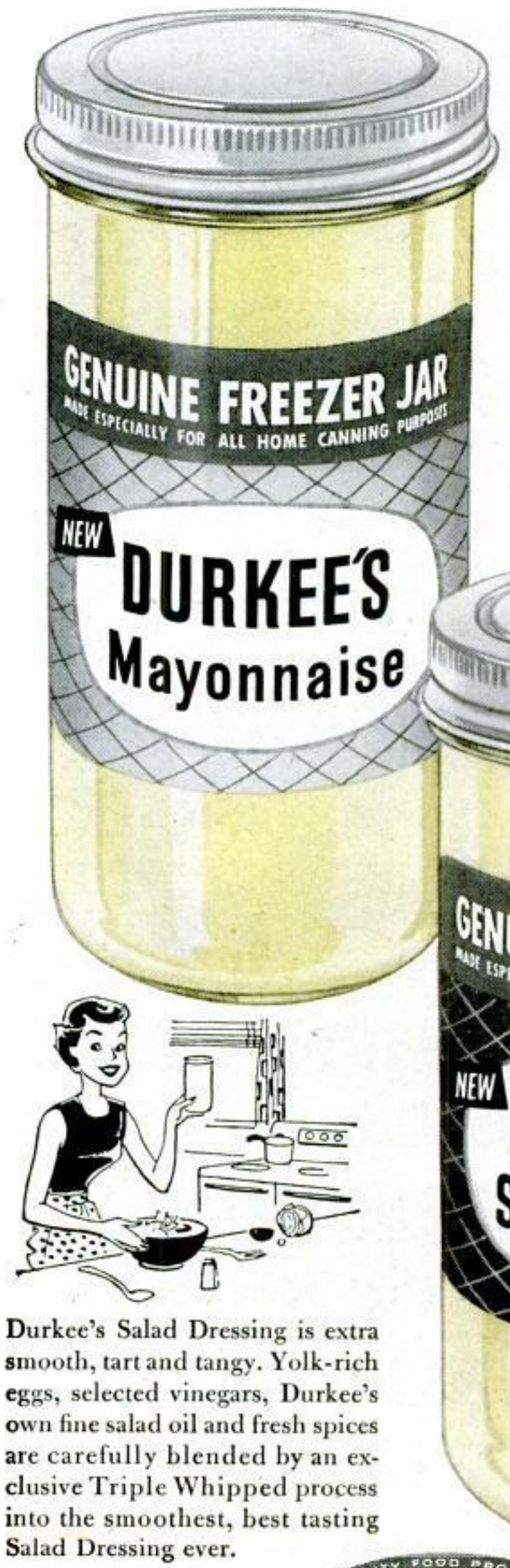
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10,000 MEN TO A PLANE CONTINUED

along beside each other. As soon as he came to a halt, Apt leaped out of his plane and ran over to Harer's. "It was nothing but fire," Apt remembers. "The only part of the plane I could see sticking out of the flames was the tip of the tail."

Apt dashed around to the other side of Harer's plane. Strangely, this side was not burning. Apt was able to climb up onto the plane and look through the Plexiglas canopy into the cockpit. It was filled with smoke but he could see Harer inside, feebly, faintly moving his head. Apt grabbed the canopy release, a device on the outside of the plane designed for just such an emergency. It failed.

The dry lake bed has absolutely nothing on its surface except the fine-grained sand of which it is composed. No sticks, no stones, nothing that Apt might have picked up to smash the canopy. He tried to pry it off with his bare hands, an effort that, had it not been for the circumstances, would have been ludicrous. He smashed it with his fists and succeeded only in injuring himself. Meanwhile he could see Harer inside, the fire beginning to get at him now.

As Captain Apt smashed his fists on the canopy, a single jeep raced across the lake bed toward the plane at 70 miles an hour. Reaching the plane, the driver leaped out and ran over to it, carrying the only useful piece of equipment he had: a five-pound brass fire extinguisher, the size of a rolling pin. He could as well have tried to put out the fire by spitting on it. Apt and the jeep driver shouted contradictory instructions at each other above the growing roar of the fire. The jeep driver emptied his extinguisher on the forward part of the plane, then handed the empty container to Apt. Apt raised it above his head and smashed it down on the canopy. It bounced off. He pounded the canopy again and again, as hard as he could, and each time the extinguisher bounced off. "It was like hitting a big spring," he says forlornly. "I couldn't break it."

Meanwhile, 9,950 men on the base quietly pursued their jobs, unaware of the accident. The obstetrician said, "Come back Thursday, Mrs. Smith," Robert Hawn worked on his YAPS, and Smith, Douglas S., changed a tire. The only immediate spectators, aside from Apt and the jeep driver, were the Joshua trees growing all along the edge of the lake bed, very old and mournful.

By this time Captain Harer's flesh was on fire.

The jeep driver dashed back to his vehicle and returned with a five-gallon gasoline can. "My God," Apt thought. "No, no," the jeep driver cried, "it's full of water. It's all right."

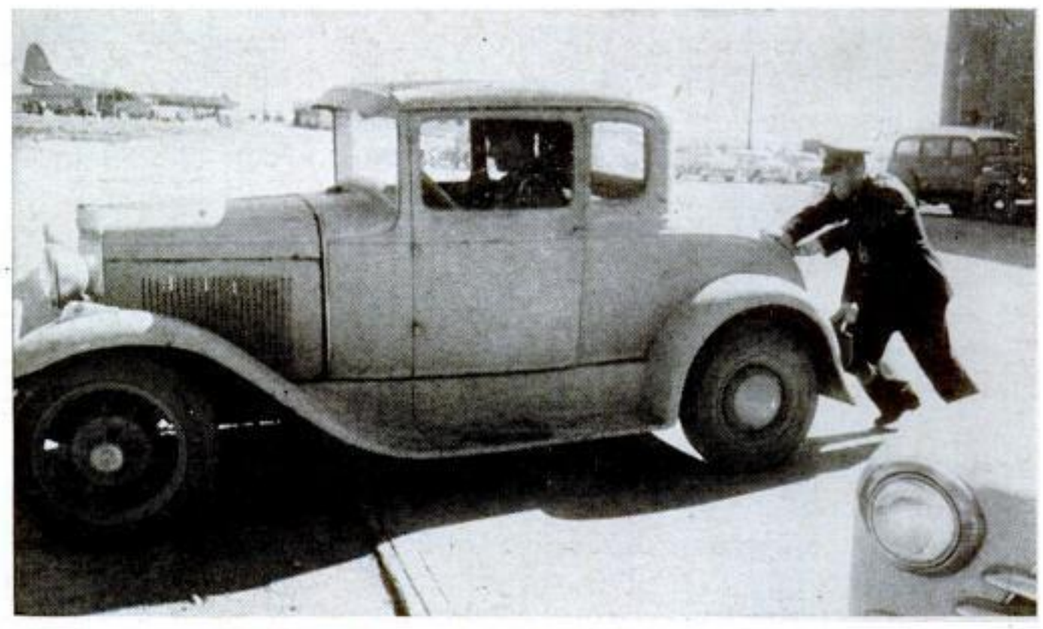
Apt hefted the can, which weighed nearly 50 pounds. He raised it high in the air and smashed it down. The canopy cracked. Apt hit it again, opening a hole in it, letting out the smoke inside. In a few seconds he had broken a large jagged opening through which Harer could be pulled out. "It was a tough job," Apt says. "Harer was a very tall man."

Was a tall man. Not is, but was.

"He's not so tall now," Apt says. "Both his feet were burned off."

Captain Harer lived. Today, he gets around very well on his artificial feet. He has been promoted to major and will soon be honorably retired from the Air Force with a pension. He has no memory whatever of the accident. He recalls flying at 20,000 feet and popping open the parachute, and his next memory is of awakening in a hospital two weeks later.

Half an hour after the crash, Apt was back in the air flying another mission, with a YAPS on his nose, his tires safely inflated and his plane flying beautifully because some good, responsible sergeant had worked on it. Below he could see the sprawling, windswept base and, noticing a particularly big puff of smoke on the desert, could wonder, "What the hell are they doing over there?"



SLOW MAN ON THE GROUND, the X-2's Test Pilot Everest likes to drive a Model A Ford. Here, unable to get it started, he gets a push from a friend.

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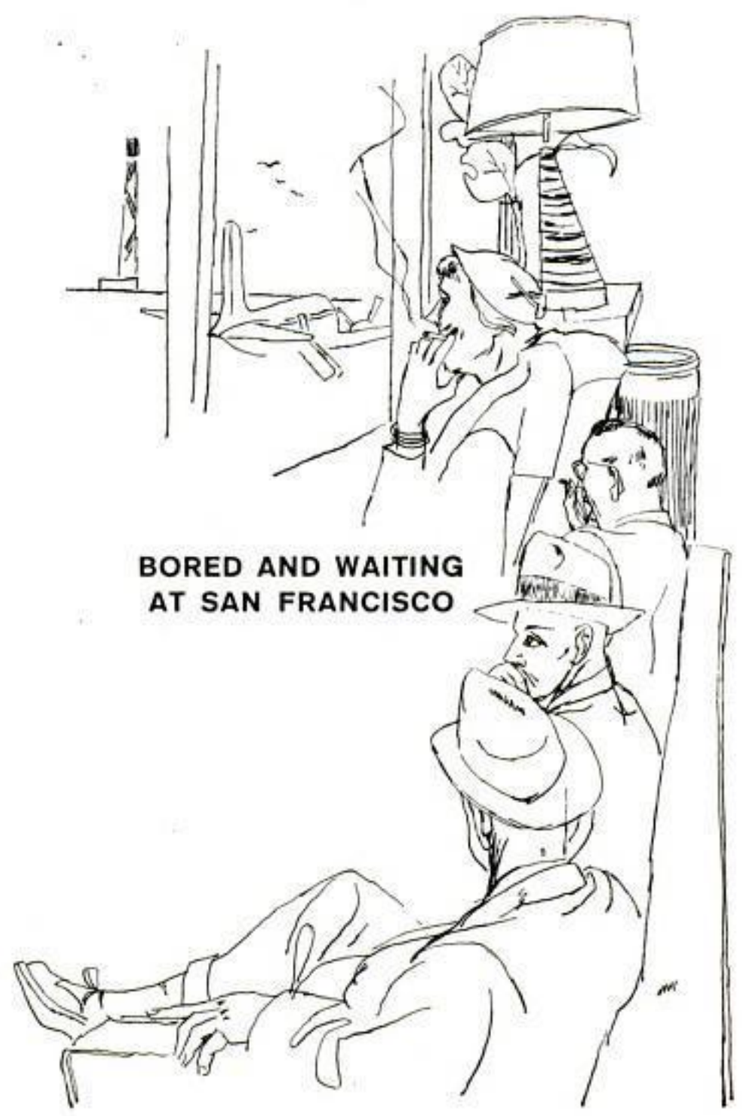
HONG KONG IS SET AMONG MOUNTAINS, LOVELY AND DANGEROUS

New Gateways to the Wide World

ARTIST VIEWS LIFE OF THE AIRPORTS

At the beginning and end of flight, and often for long hours in what should be the middle of it, are the airports. They are the crossroads of the modern world—bits of cosmopolitan swank set in tropical jungles, buttoned-up hutments of warmth on an arctic tundra, palaces of glass in central Europe, seam-bursting shacks serving great cities. They are exciting doorways through which a man can step into Zurich or Bangkok. They are also dreary places where men, bored stiff and bone weary, wait out prolonged delays through the tag end of the night or under the day's broiling sun.

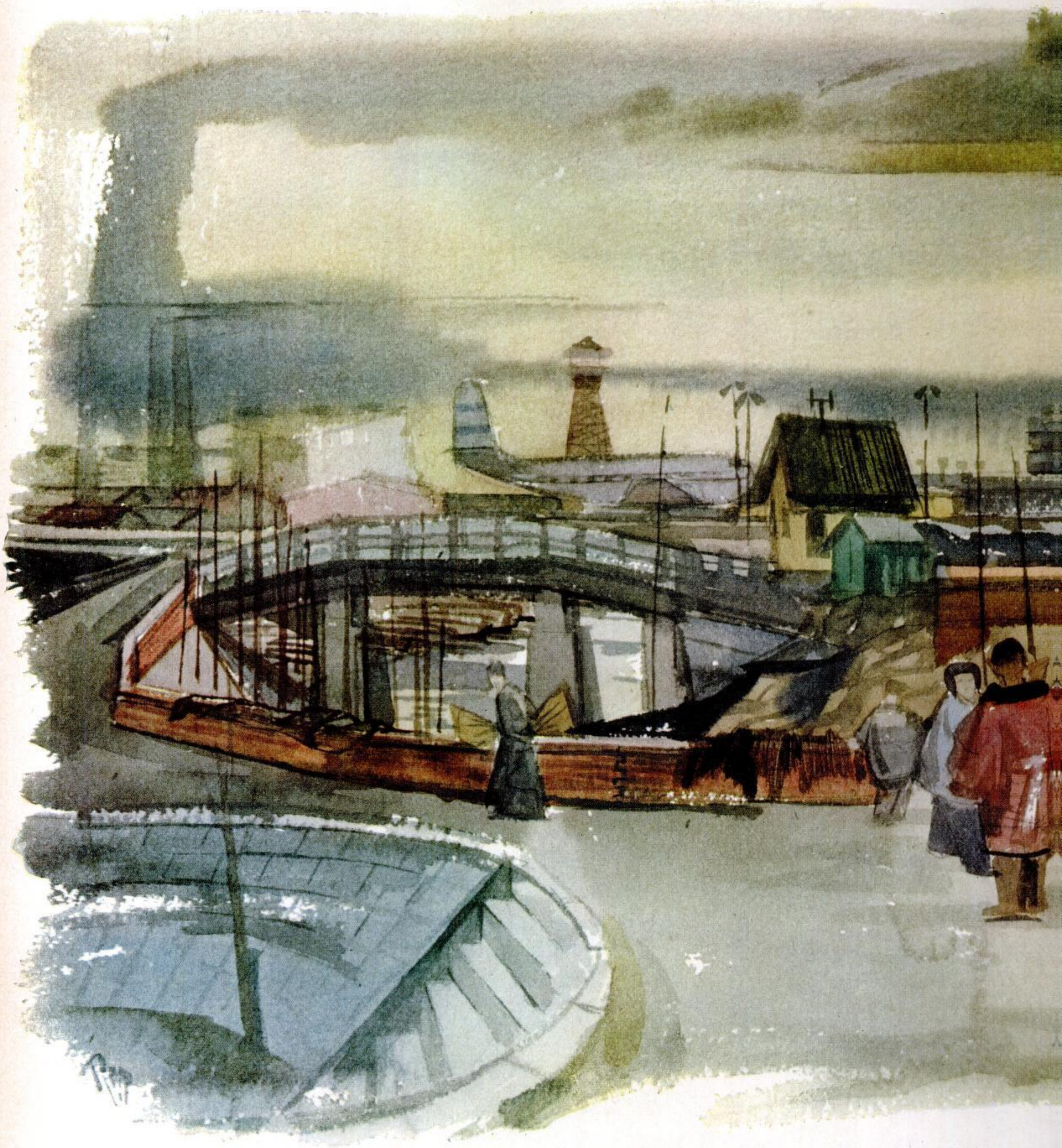
To catch the atmosphere and moods of these gateways to the air LIFE commissioned Edward Reep, a California artist with a fine eye for picturesque detail, to visit airports round the world and paint them as he saw them. On these and the following pages, in drawings and watercolors, he sets down sights and sensations, starting with a sketch (*right*) of a sophisticated set of San Franciscans waiting for their flights to be called for Honolulu (*opposite page*) and Hong Kong (*above*).



BORED AND WAITING AT SAN FRANCISCO

Painted and drawn for LIFE by EDWARD REEP

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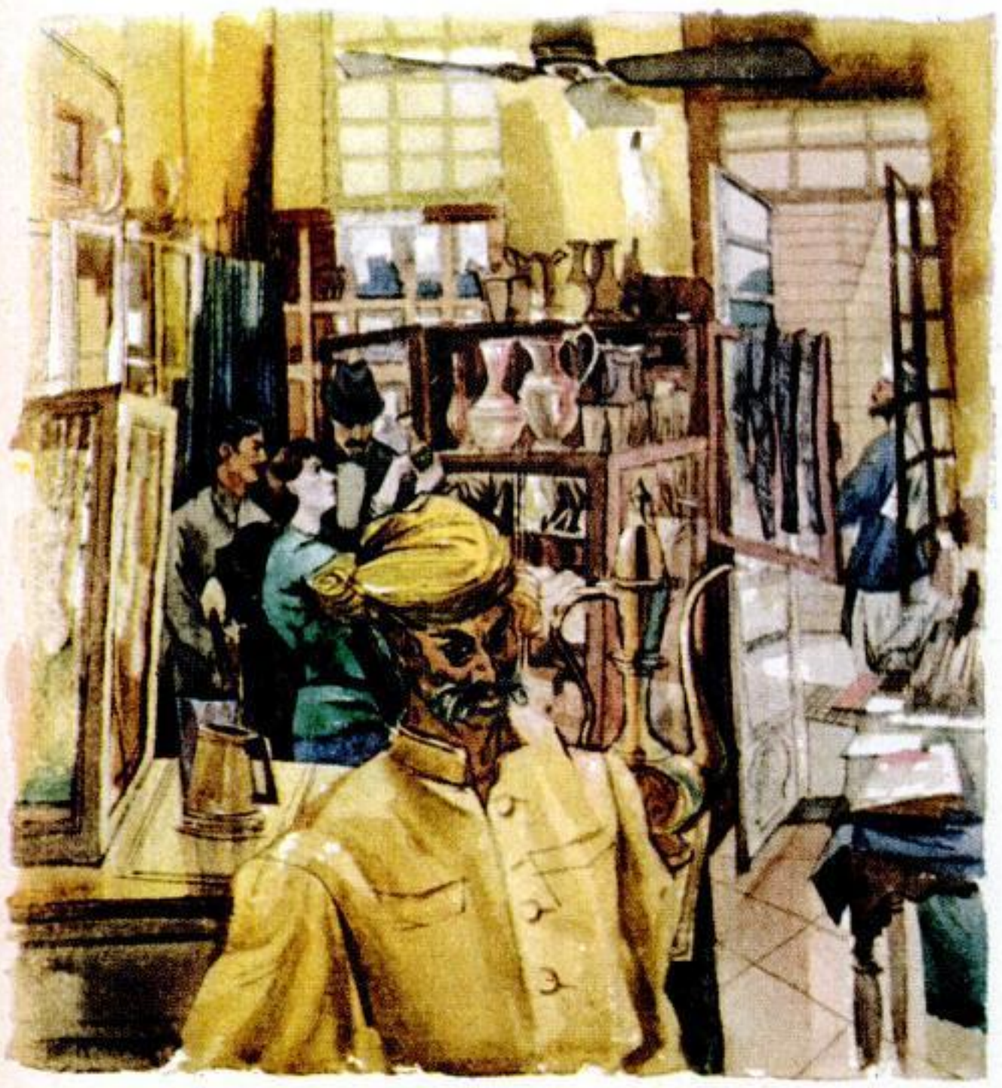


TOKYO'S OLD AND NEW stand side by side along perimeter of a new international airport built on reclaimed swampland. Here fishermen dock their boats in the canals, live their lives in ancient patterns and ignore control towers, ramps, runways and thundering motors which have encroached upon the marsh, as once they ignored the factory (*right*) bombed out during the war.

IN THE DEAD OF NIGHT, at any airport, weary passengers sleep, toss, turn, squirm and wait perforce for their plane.

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BANGKOK MONKS carrying umbrellas stroll about Don Muang airport watching airplanes and taking pictures of passengers, some of whom take pictures of the monks. Monks are everywhere in Thailand because most males there, at some time during their lives,



SHOP IN KARACHI draws tourists who bargain with clerk in background as porter waits.

KARACHI FAMILIES (*below*) crowd along the rail at the city's Civil Airport bidding goodby to relatives. By day this airport is sleepy, handling mostly local flights to India and other cities in Pakistan. By night it comes alive as big international transports





BANGKOK'S WAITING ROOM

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shave their heads and lead a monastic life for at least a few weeks. The airport, one of the Orient's busiest, is a junction point at which air routes from Europe fork southward to Saigon, Singapore and Djakarta and northeastward to Hong Kong.

flying back and forth from the Far East to Europe touch down. The women are garbed Punjabi style, wearing pants and *kamiz* under cloaklike burkas designed to conceal all but the eyes. Nowadays, however, many women throw back the face veil.

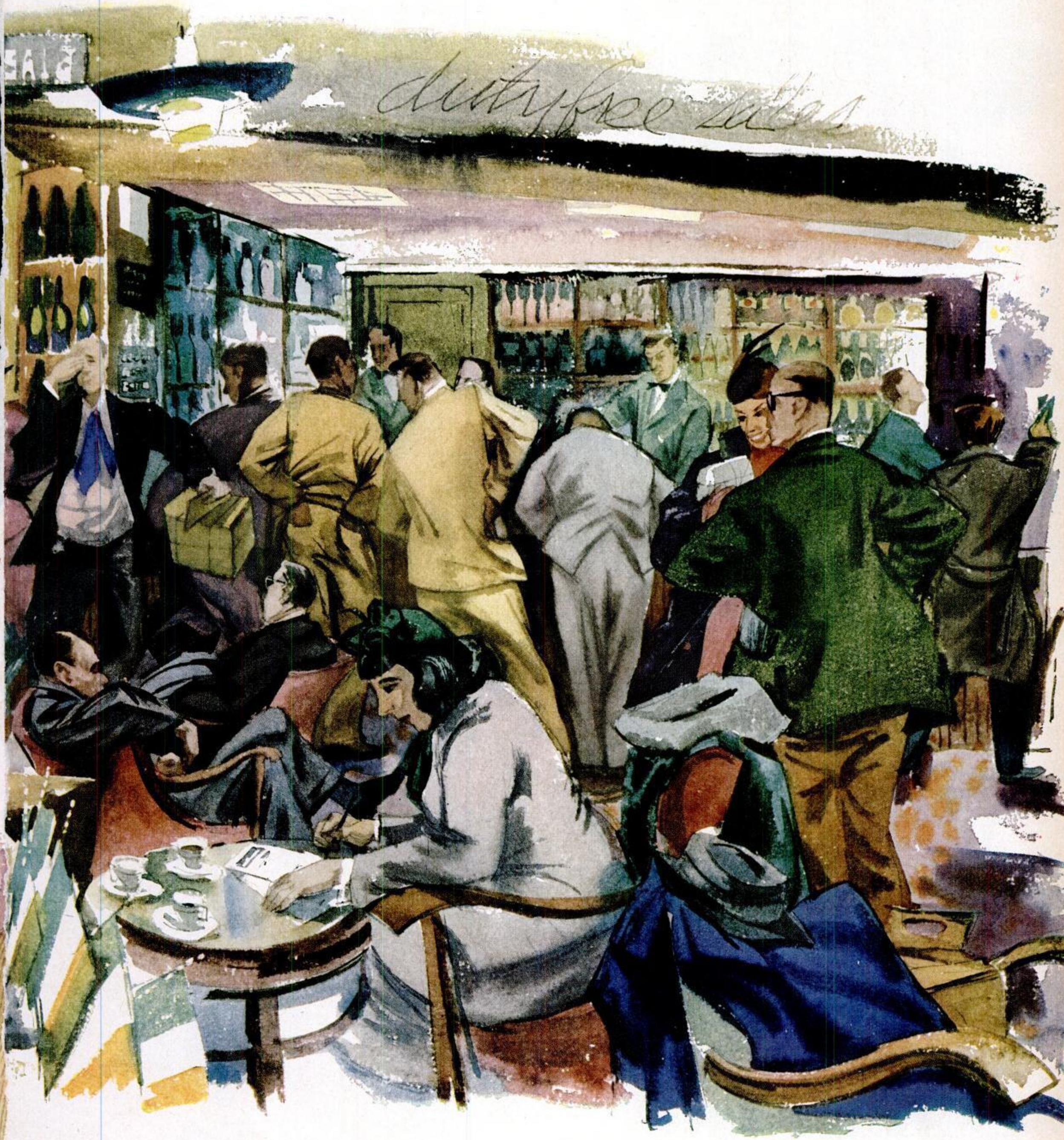
CUSTOMS AT BANGKOK is an Oriental babel where passengers are served soothing drinks.

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UNDER BEIRUT'S MOUNTAINS, looming 5,000 feet over Lebanon's big International Airport, a vast traveler snoozes while other travelers sip coffee or read. Despite tensions in the Middle East the atmosphere of the airport is relaxed and easygoing.

LUXURY AT ZURICH, the Kloten Airport is one of the world's best. Operated not as a runway for transients but as a first-class hotel, it has lounges with showers, playrooms for children, sightseeing buses and an excellent restaurant.

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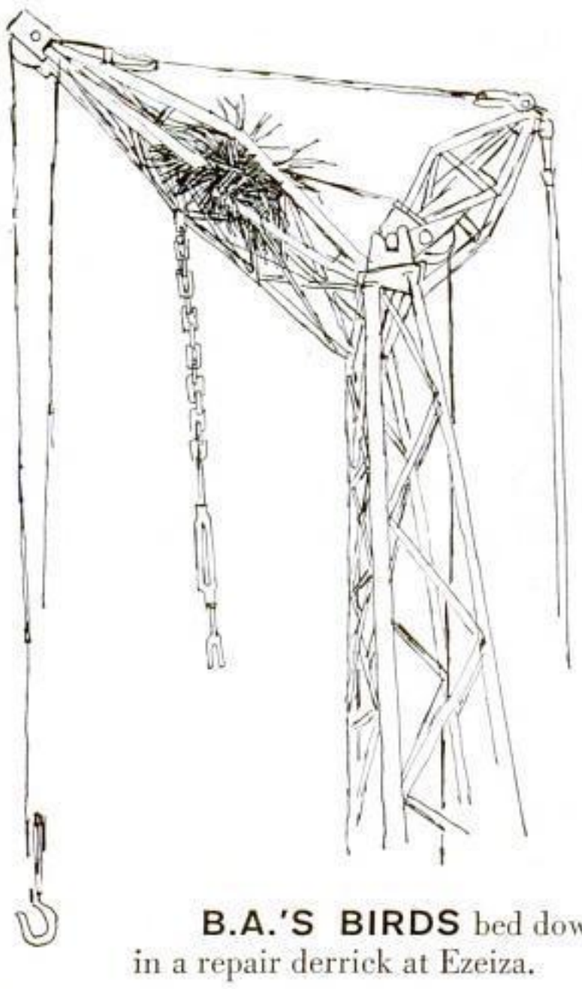
FRENCH POLICEMAN languidly halts pushing crowd at Paris' Orly Field.

SHOPPING IN SHANNON, Irish airport where planes are refueled for the long hop across the Atlantic, passengers storm liquor store. Here, tax-free, the best brands of Scotch and Irish whisky cost a third of what they cost in the U.S.

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SUNDAY AT BUENOS AIRES finds families
and couples flocking to Ezeiza airport
in rickety buses for a day's fun
in which airplanes play no part.
It is a resort—complete with swimming pools,
restaurants and casinos.



B.A.'S BIRDS bed down
in a repair derrick at Ezeiza.

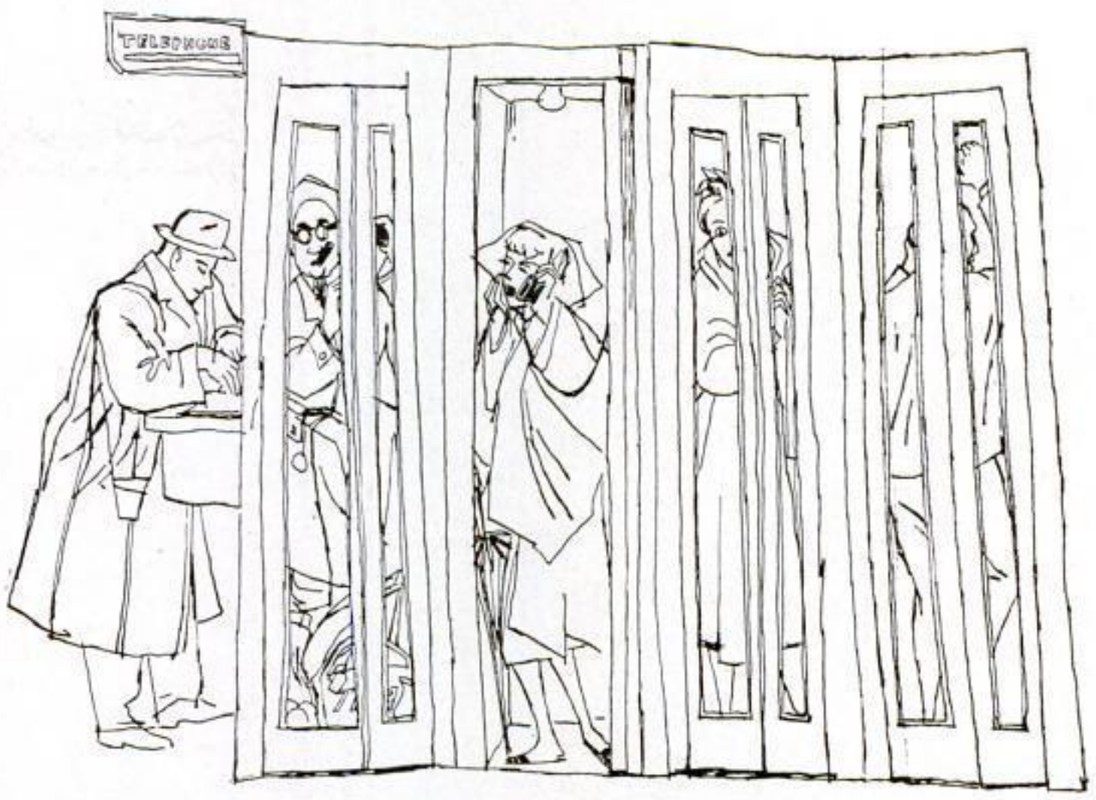




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EZEIZA AT NIGHT, with its fun-seekers gone, is a quiet, gleaming palace of glass, marble and chrome. A $60 million project, it is the largest airport in South America.



IN NEW YORK returning travelers jam Idlewild's phone booths. The trip, they announce, is over.

PERUVIAN COCKFIGHT in silver and the soaring slopes of the mighty Andean mountains are fused into one composition by multiple reflections in windows in Lima's Limatambo Airport. Also reflected are a shop window's llamas and silver fish.

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3





2





1



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Now an extra reason to enjoy these Heinz favorites

Labels from thrifty, better-tasting Heinz Beans, Spaghetti and Macaroni offer you big savings on *deLux* melmac® Dinnerware

NOW you can get beautiful, long-wearing *deLux* Melmac Dinnerware *at a fraction of its retail value.* Just save labels from three Heinz ready-to-serve foods that are so popular you probably have them on hand. All Heinz Bean, Heinz Spaghetti and Heinz Macaroni labels are redeemable. It does not matter whether the *deLux* Melmac offer is printed on the labels or what size cans they come from.

● **You'll be proud** to own a complete family table service of smart, modern *deLux* Melmac Dinnerware, so repeat your order as often as you wish. Fine *deLux* Melmac Dinnerware is guaranteed one year against breaking, chipping or cracking—can be washed in boiling water or automatic dishwasher—is lightweight and impervious to fruit acids.

● **Simply choose** the *deLux* Melmac assortment you want from the descriptions below. Then send us the labels with your check or money order and the coupon. This money-saving offer is our special way of expressing our thanks to the many regular users of mellow Heinz Beans, hearty Spaghetti and creamy Macaroni—and to win new friends.

1906—Fiftieth Anniversary Federal Food, Drug and Cosmetic Laws—1956

1 Choose from four kinds of tasty, mellow Heinz Beans: Pork and Beans, Vegetarian Beans, Boston Beans and New England Beans. Three handy sizes.

2 Enjoy new thin-strand Heinz Spaghetti in zesty tomato sauce, now flavored with *two* select cheeses—real Romano as well as Cheddar.

3 You'll like Heinz Macaroni in cheese sauce and Heinz Macaroni Creole with Mushrooms. Their labels are good for *deLux* Melmac offer, too.



● **THIS $5.60 VALUE ONLY $2.50** with any 3 Labels from Heinz Beans, Spaghetti or Macaroni. (5-piece place setting of 10-inch dinner plate—soup bowl—cup and saucer—6-inch salad plate).

COLORS: Sea-Mist Green, Flame-Red, Dawn-Gray, Mandalay-White. *Each place setting available in one color only.*



● **THIS $15.95 VALUE ONLY $6.95** with any 6 labels from Heinz Beans, Spaghetti or Macaroni. (6-piece serving set of 14-inch platter, Dawn-Gray; sugar bowl with cover and creamer, Mandalay-White; 9-inch serving bowl, Flame-Red; 9-inch two compartment vegetable bowl, Sea-Mist Green). *In four mixed colors only.*



● **THIS $2.80 VALUE ONLY $1.25** with any 2 labels from Heinz Beans, Spaghetti or Macaroni. Set of four 8-oz. beautiful tumblers. *One of each color*—Sea-Mist Green, Flame-Red, Dawn-Gray, Mandalay-White.

deLux MELMAC offer

H. J. HEINZ CO.
Box 28, D-6
Pittsburgh 30, Pa.

I am enclosing $_____ (check or money order—no cash, please) and _____ labels for
☐ 6-pc. serving set; ☐ set of 4 8-oz. tumblers;
☐ 5-pc. place setting in color checked: ☐ Flame-Red ☐ Sea-Mist Green ☐ Mandalay-White ☐ Dawn-Gray

Name_____
(Print Plainly)

Address_____

City_____ Zone_____

State_____

Offer good only in Continental U.S. and Hawaii. (Allow minimum of 4 weeks for delivery.) Offer expires May 1, 1957.

Watch Heinz "Studio 57" and "Captain Gallant of the Foreign Legion" every week on TV.

*Trade-mark American Cyanamid Company

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They all have minds of their own

"Choose-it-yourself" breakfasts like this satisfy even the most rugged individualist. For everyone gets his own choice, with ten personal portions of his favorite cereals to pick from. Very easy, very good, very satisfying—for you and yours!

Kellogg's VARIETY PACK

America's best-liked cereals, in convenient individual packages, are served at better restaurants, too.

REALLY STUBBORN? Psychologists point out that during the years a youngster is learning how to make his own decisions, he may be unjustly accused of having a "stubborn streak." But if he is given opportunities to express himself (yes, even in little things like choosing his own cereal) this so-called stubbornness more quickly develops into such desirable traits as confidence and judgment. Isn't it nice to know you're also helping your children's characters grow, when you serve Kellogg's Variety Pack for breakfast?

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Wings for Weekends

AMPHIBIANS CARRY FAMILIES INTO WILDS

For some 30,000 Americans, owners of pleasure planes, the air age is a family affair. They use their planes—usually two- or four-seaters—as others do cars and motorboats, to get far away from everyday places and faces.

The planes, owned by three friends in Seattle, Robert Dent, James Campbell and Donald Fitzpatrick, take them to wildly beautiful spots like the one shown here—the forests of Sproat Lake on Vancouver Island in Canada. Each of the men owns a four-seater Republic Seabee Amphibian which he moors near his home on Seattle's Lake Washington. In the spring and summer they go to an island lodge for a weekend of fishing, swimming and flying. The 90-minute trip covers 175 air miles, but the island's isolated beauty and some of its inhabitants—trappers and seal-hunting Indians—make it seem thousands of miles away from the civilization that the Seattlers know.

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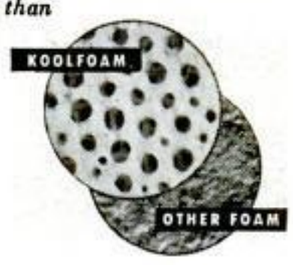
Science shows how to

BEAT THE HEAT WITH KOOLFOAM

Here's the amazing new pillow that takes the temper out of temperature! Greet mornings relaxed and raring to go, after sound, refreshing *all-night* sleep on the world's most comfortable pillow . . . *genuine* Dayton Koolfoam! NO other pillow gives you Koolfoam's patented "*Air-Conditioned*" action. Cool, flower-fresh air pumps IN, stale air pumps OUT with every move. Koolfoam *cannot* get lumpy and bumpy . . . it's always sleep-inviting, more sanitary and allergy-free. Enjoy the *rest* of your life! Get your new, improved Koolfoam at stores everywhere, in popular sizes . . . at popular prices . . . NOW! Don't wait 'til hot weather steals your sleep.

"Air-Conditioned" comfort . . .

Magnified laboratory photos clearly show advantages of Koolfoam's patented open-pore surface, giving up to 14 times more air-flow than ordinary foams



Dayton Koolfoam® "Air-Conditioned"™ pillows



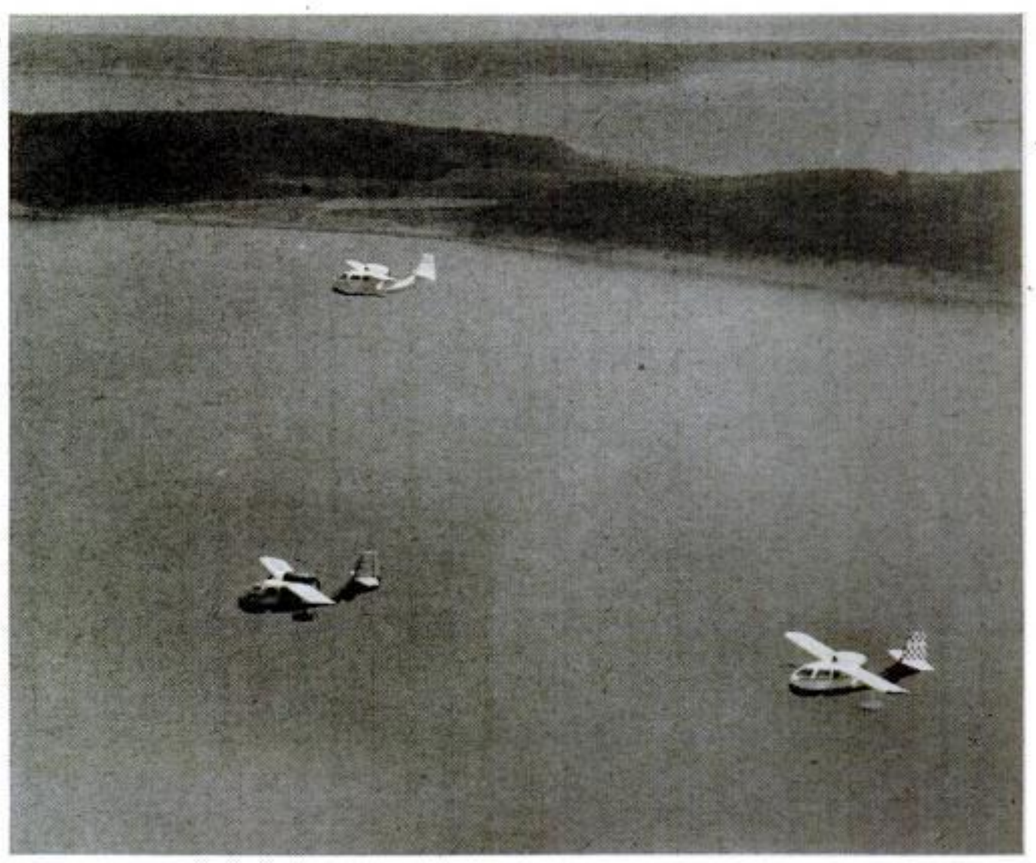
NEW . . . Koolfoam Slumber Pads!

This super mattress pad gives more comfort, more protection, more life to any mattress, old or new. Non-allergenic 100% foam latex . . . fabric backed for tear-resist strength. Extra thick. Fully washable.

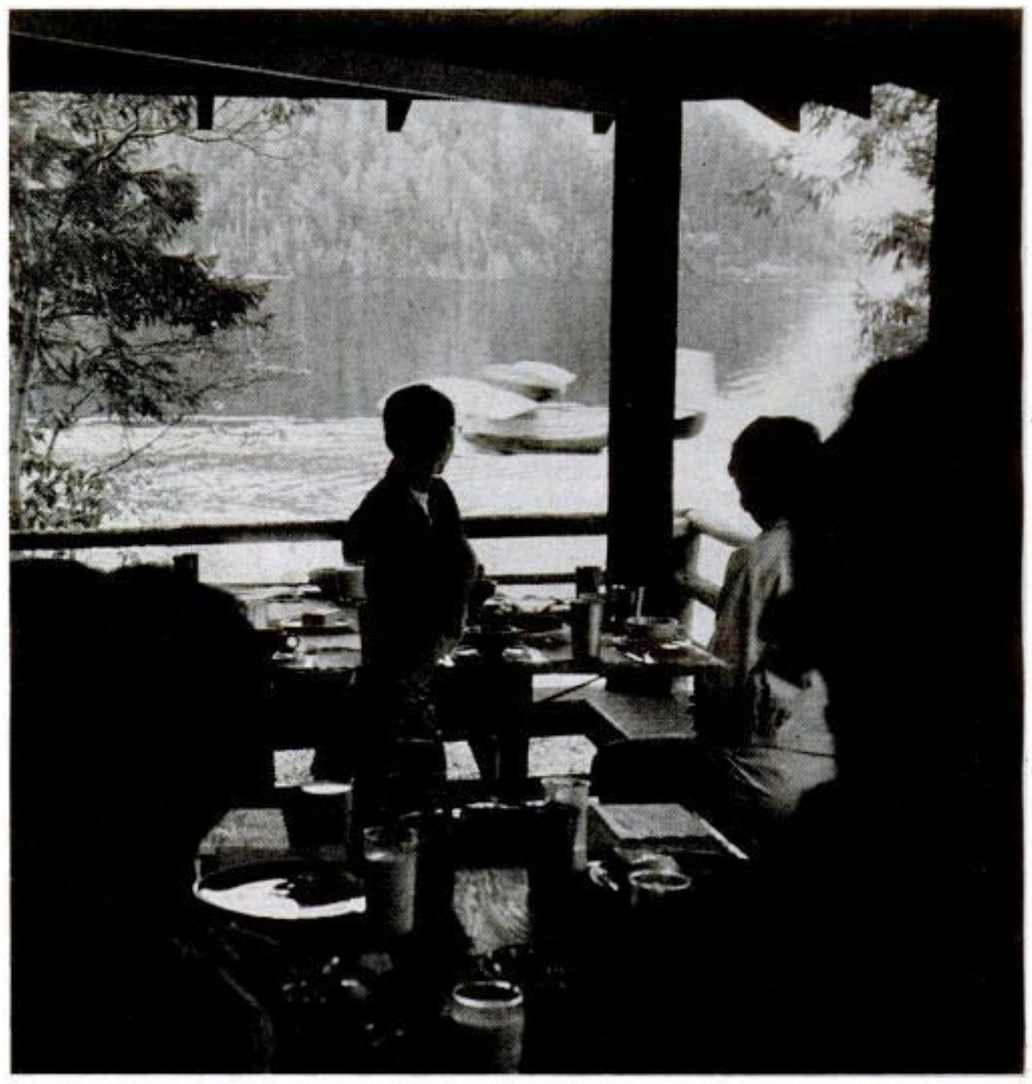
THE DAYTON RUBBER COMPANY, DAYTON, OHIO • WAYNESVILLE, N. C.
World's largest manufacturer of Foam Latex Pillows



PREPARING FOR TAKE-OFF, the Dent children load plane moored at dock before their Lake Washington home. The plane normally holds four grownups but in this trip the parents, four children and their dog went along.



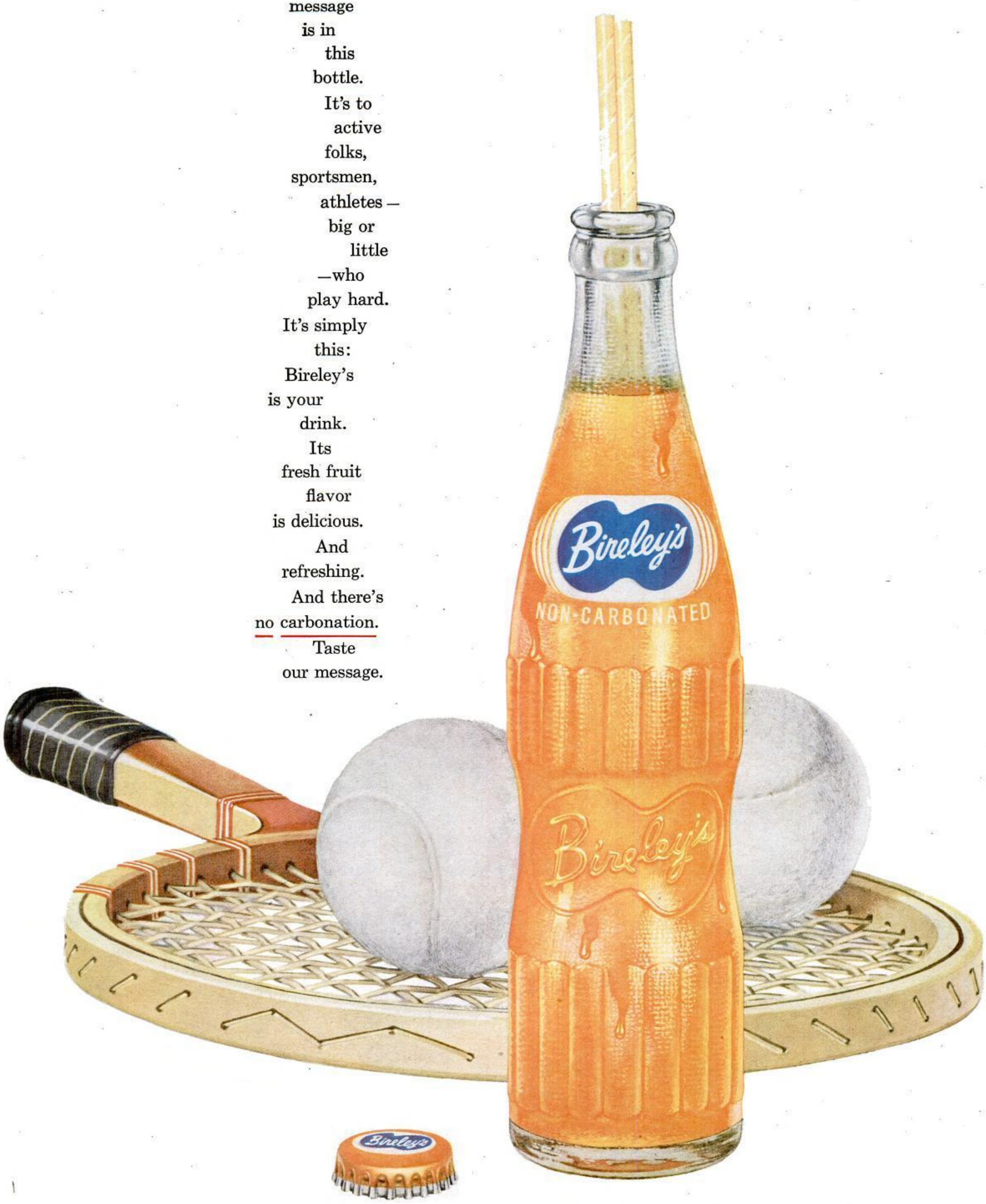
HEADING NORTH, three planes fly over strait separating southern tip of Vancouver Island from mainland. Campbell leads, Dent is on his left, Fitzpatrick on right. The $4,000 planes cruise at 103 mph, have 560-mile range.



BREAKFAST INTERRUPTION at island lodge comes as Jim Campbell returns in plane after getting gas. One-acre island and lodge once belonging to Cornelius Vanderbilt Jr. were bought cheaply by Campbell and friend in 1953.

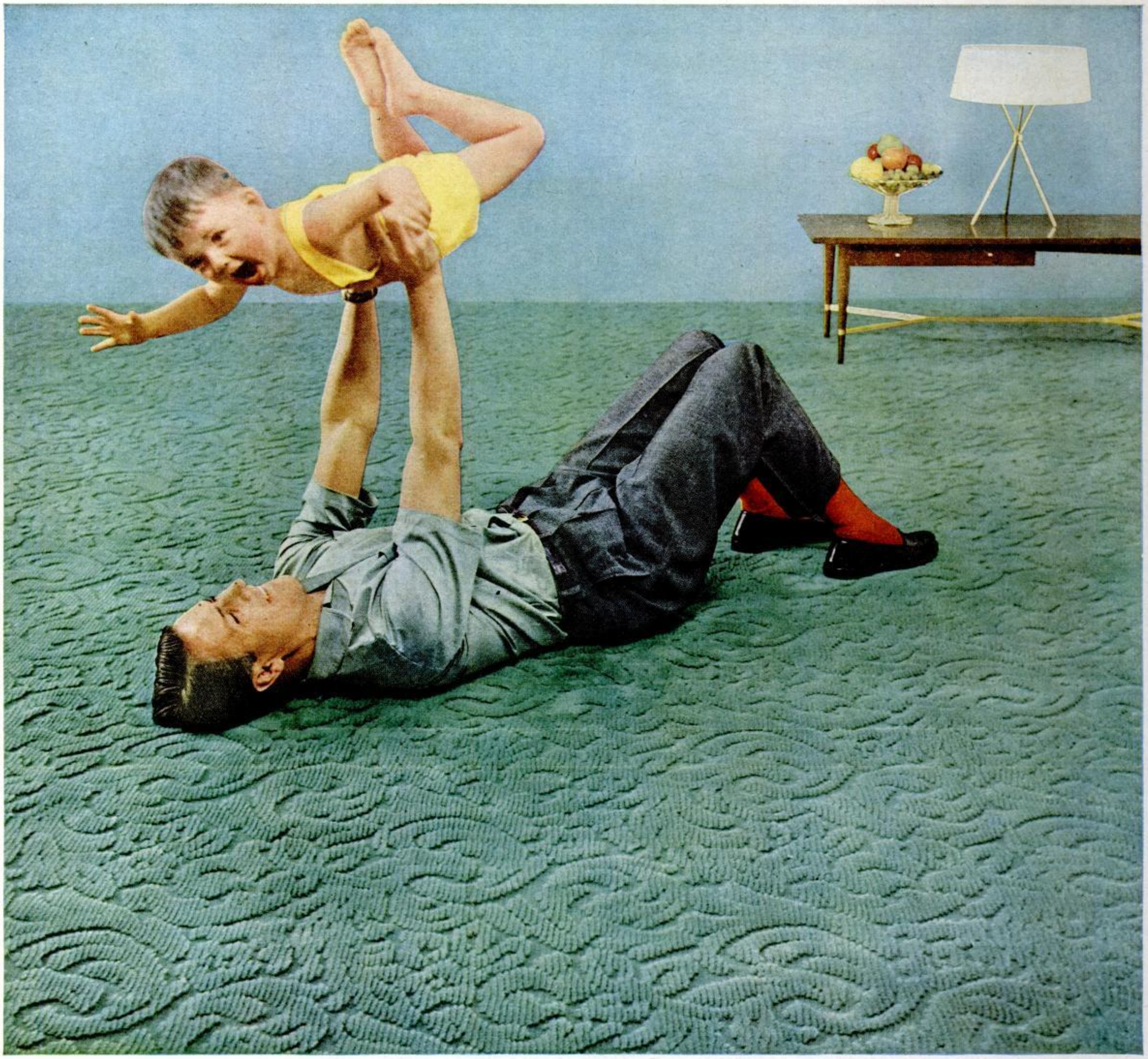
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Our
message
is in
this
bottle.
It's to
active
folks,
sportsmen,
athletes –
big or
little
–who
play hard.
It's simply
this:
Bireley's
is your
drink.
Its
fresh fruit
flavor
is delicious.
And
refreshing.
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Taste
our message.



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It could only happen on carpet

Carpet is one of the few things you can buy for your home that gives you far more than it promises.

You know it's beautiful...that it looks so soft and comfortable. But carpet doesn't just look soft—it is soft. It doesn't just look relaxing. It is relaxing because it swallows so many of the noises that make a house "restless."

And, along with the fact that there's more comfort in carpet than meets the eye, there's a lot more safety and a lot less work than you'll find in any other floor covering. Safety because carpet provides firm, slip-proof footing for hurrying children or busy adults. And less work because carpet only takes an occasional quick vacuuming to keep it bright and lovely.

There's a world of better living waiting for you and your family at your nearest carpet store. Why not stop in — now — and see all the wonderful new colors and styles. You can have the carpet you've always dreamed about for far less than you'd imagine it would cost.

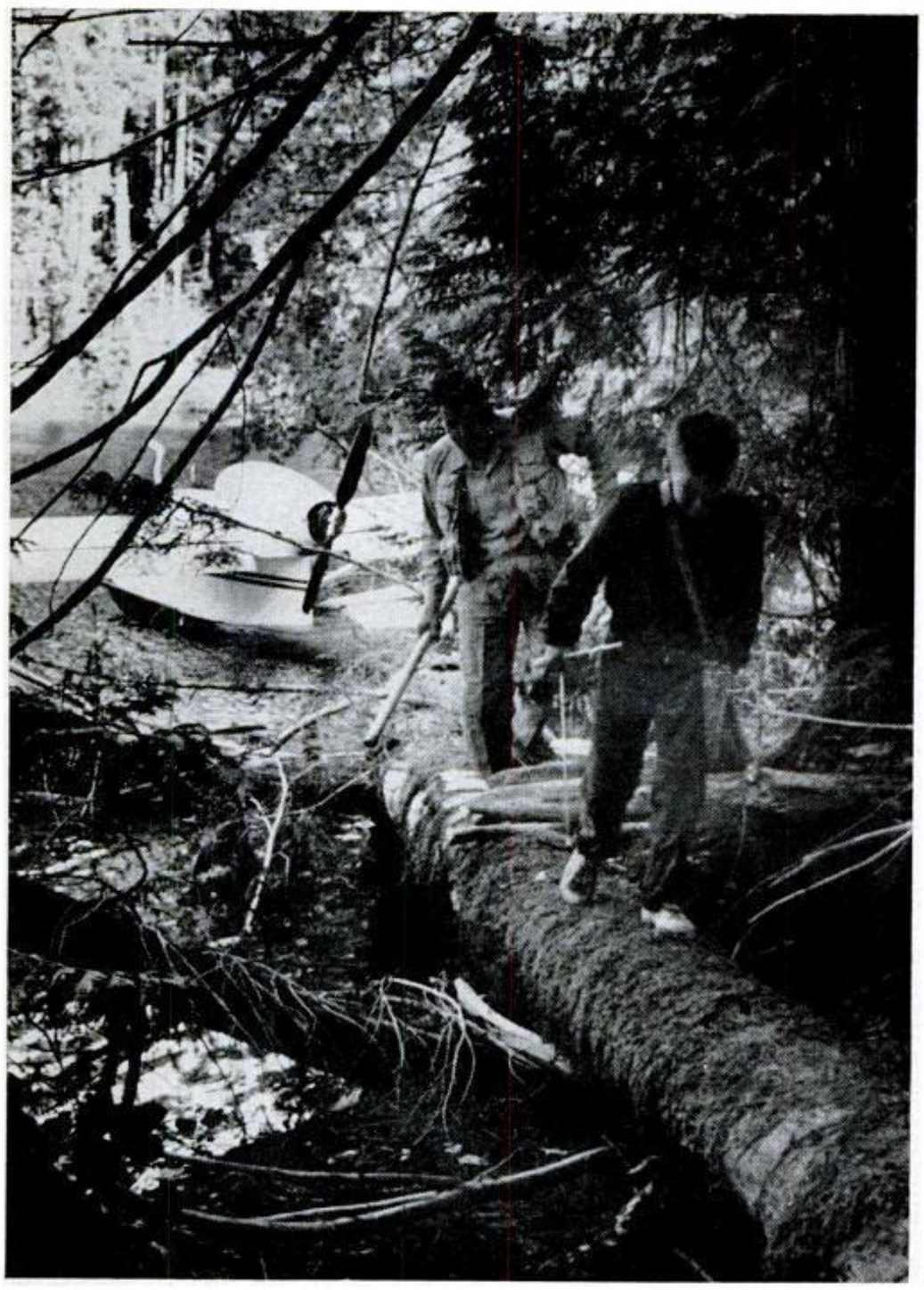
Enjoy the carpet of your dreams *while* you pay for it. Take advantage of the convenient budget terms offered by carpet retailers who represent these American manufacturers



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CARPET INSTITUTE, INC., 350 FIFTH AVENUE, NEW YORK 1, N. Y.

Home means more with carpet on the floor—*more comfort • quiet • safety • beauty • easier care*

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ON SIDE TRIP, Roger Dent and father moor plane in Nahmint River and walk to favorite fishing hole. River is five-minute flight from Sproat Lake.



PICNIC LUNCH of crabs is eaten on the Vanderbilt Island beach. Crabs were bought at an Indian village on the seacoast, a 20-minute flight away.

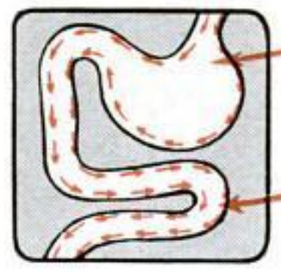
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Stomach UPSET?

Indigestion? Nausea? Diarrhea?



Hospital Tests prove Pepto-Bismol works where Soda and Alkalizers fail!



1. Pepto-Bismol helps soothe in the stomach... where overdoses of soda and alkalizers may actually prolong the upset!
2. Pepto-Bismol also helps calm distress in the intestinal tract . . . where soda and alkalizers never help!

Pepto-Bismol's special medicinal formula soothes both the irritated stomach and intestinal walls with a gentle coating action. It helps retard gas formation; calm heartburn, nausea. Controls simple diarrhea—without constipating.

P.S. MOTHERS! Pepto-Bismol is effective, mild, safe for children, too. They love its wonderful flavor.



Take Hospital Tested

Pepto-Bismol®

...and feel good again!

A NORWICH PRODUCT



This is the new Bell & Howell 200-S Auto Load—now with Sun Dial added.

Extra easy movies...all you do is dial!

Movies are more than easy with Bell & Howell's 16mm Auto Load camera. They're fun! The Sun Dial does it. Five settings cover almost every light condition. Just set it, sight and shoot. Perfect color movies? You bet! Here's added pleasure. Swift, sure, magazine loading. Five shooting speeds including slow motion. Fast f/2.5 Sunomatic lens. Bell & Howell *imagination* brings you all this and more—at your dealer's. The 200-S Auto Load, $174.95.

Free Booklet, "Tips on Making Color Movies," Bell & Howell, Dept. L-10, Chicago 45

FINER PRODUCTS THROUGH IMAGINATION **Bell & Howell**

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MIDAS® MUFFLER SHOPS



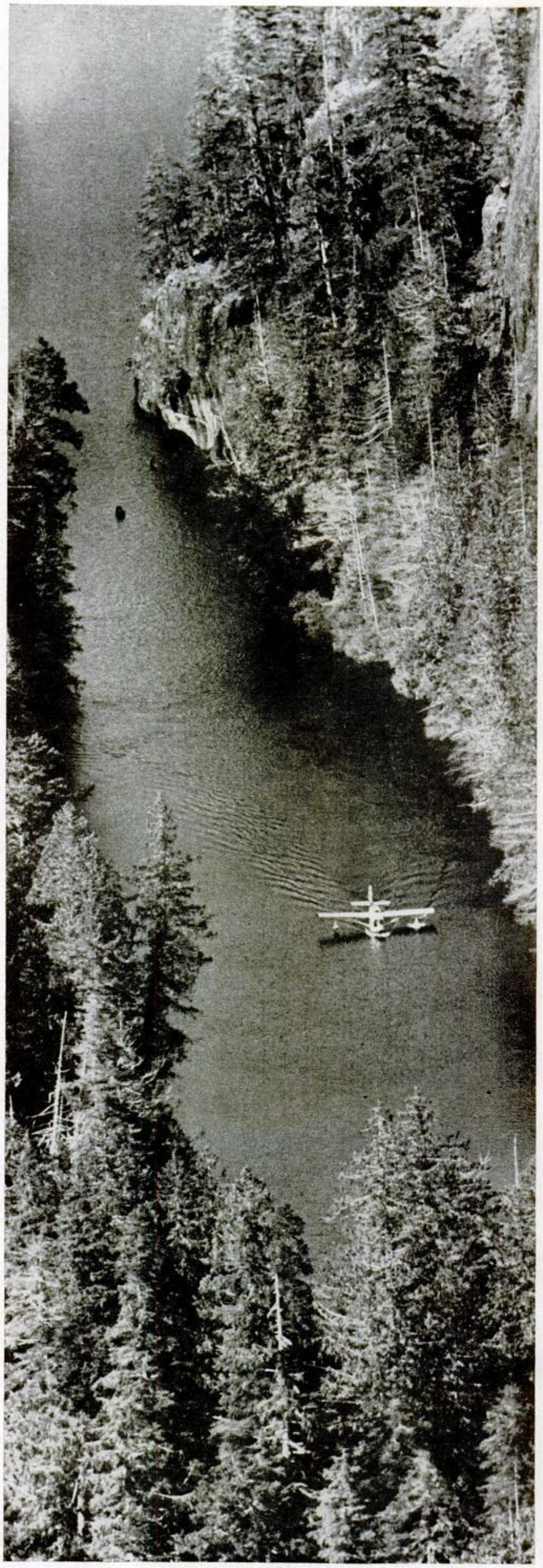
1. FREE Installation on all mufflers
2. FAST SERVICE . . . Takes only 15 minutes
3. WRITTEN FACTORY GUARANTEE GOOD FROM COAST-TO-COAST for life of vehicle on which it is installed
4. EXHAUST SYSTEM SPECIALISTS DO SKILLED INSTALLATIONS— on all makes and models.

HAVE YOUR MUFFLER CHECKED FREE AT ANY OF THESE MIDAS MUFFLER SHOPS TODAY

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HAMMOND, INDIANA, 6031 Calumet Avenue
INDIANAPOLIS, INDIANA, 322 E. Market Street
LAFAYETTE, LOUISIANA, 339 S. Buchanan
SHREVEPORT, LOUISIANA, 1024 Texas Avenue
BALTIMORE, MARYLAND, 5617 Harford Road
WHEATON, MARYLAND, 2652 Kensington-Wheaton Road
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MUSKEGON, MICHIGAN, 2107 Henry Street
JACKSON, MISSISSIPPI, 1305 Gallatin, Box 8008
KANSAS CITY, MISSOURI, 1905 Truman Road
ALBUQUERQUE, NEW MEXICO, 213-215 Tijeras
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MIDAS® Inc.
1023 S. State St. Chicago, Ill.



EXPLORING NEW WATERS, Bob Dent taxies through gorge in search of fishing spots. He snapped off one float here, but could take off without it.

New! Clearasil Medication

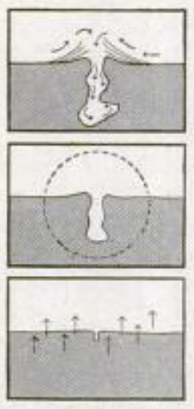
'STARVES' PIMPLES

SKIN-COLORED... hides pimples while it works



Doctors prove this new-type greaseless medication *especially* for pimples really works. In skin specialists' tests on 202 patients, 9 out of every 10 cases were cleared up or definitely improved while using CLEARASIL.

3 MEDICAL ACTIONS WORK FAST



1. PENETRATES PIMPLES . . . keratolytic action softens and dissolves infected skin tissue . . . permits medication to penetrate to any *lower* pimple infection.
2. ISOLATES PIMPLES . . . antiseptic action of this new-type medication stops growth of bacteria that can cause and spread pimples.
3. 'STARVES' PIMPLES . . . CLEARASIL's famous dry-up action 'starves' pimples because it helps to remove the oils that pimples "feed" on.

ENDS EMBARRASSMENT because skin-color hides pimples amazingly. Guaranteed to work for you as in doctors' tests, or money back. Get CLEARASIL today; only 69¢ at all drug counters (economy size 98¢).



America's Largest Selling Pimple Medication

COMPARE Stradivaro SEWING MACHINES
FULLY AUTOMATIC ZIG-ZAG AND STRAIGHT SEWER



Also: President, Modern and International
for name of nearest dealer write
MODERN SEWING MACHINE CORP.
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New MAGNA-LITE INSECT REPELLENT CANDLES
Effectively repels mosquitoes, gnats, sandflies, etc. In cute, re-usable ceramic flower pots . . . colorful assorted pastels.
ONLY 59¢ At leading stores everywhere!
MAGNA, INC. • Bensenville, Illinois

We love our genuine MENGEL DOORS.
They're built by fine furniture makers.*



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GONE FOR GOOD
the old center-post agitator problem!



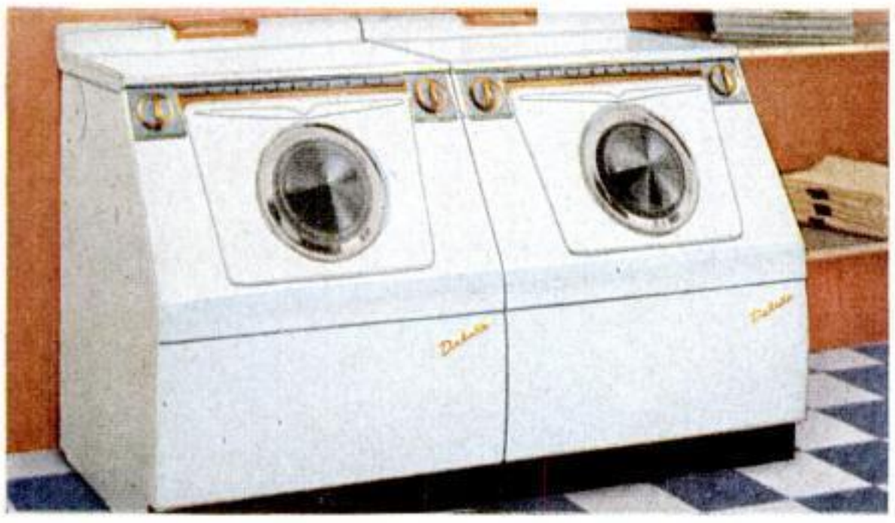
PROBLEM:

Old-fashioned center-post agitator, with its jerk-jerk motion, gives rough treatment to clothes round it, little washing to the clothes at the edges of the tub.

WESTINGHOUSE SOLUTION:

Betty Furness shows how Westinghouse removed the center-post entirely . . . put smooth agitators on the inside of the washbasket. As the basket revolves, these agitators wash the clothes thoroughly . . . each piece is washed *all* the time . . . and equally well.

Westinghouse gives you complete agitation . . . a New Way to Wash that's so thorough it gets clothes cleaner with 10 gallons less water . . . half the detergent!



Westinghouse New Deluxe Laundry Twins. New Way to Wash and thriftier Direct Air Flow Drying! Fabulous convenience features, too! Color-Glance Controls on both models . . . handy, built-in Laundroguides . . . Look-In-Loading Doors. Both in White and sparkling Westinghouse Confection Colors.

Westinghouse perfected this completely new design to give you:

- complete agitation—each piece lifted, turned, washed 50 times a minute!
- safe action for *all* kinds of clothes—no speeds or agitators to change!
- Lift-away rinsing never strains dirty water through clothes!
- Rinsing so thorough it leaves even the washer clean—completely automatic operation!



Patented Weigh-to-Save Door has built-in scale. Weighs each load automatically, tells you just where to set the Soap 'N Water Saver. Another reason why you can be sure . . . if it's Westinghouse.

Free "Be Sure You Get the Best" a guide to Laundry Equipment. Write to Betty Furness, Westinghouse, Mansfield, Ohio.

Find your Westinghouse Dealer in the yellow pages of your telephone directory under "Electrical Appliances—Household."

WATCH WESTINGHOUSE
*WHERE **BIG** THINGS ARE HAPPENING FOR **YOU!***

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ONLY NEW WESTINGHOUSE REFRIGERATORS

50 color combinations...



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GIVE YOU...

easily changed!





TRANSFORM YOUR KITCHEN WITHOUT REMODELING!

That's what this new Westinghouse Refrigerator is designed to do. Its low horizontal lines and colors flow into the planes of cabinets and walls.

It actually gives you that "planned-in" look—without the cost of a "built-in." You can choose from five cabinet colors and ten changeable color panels. Then any time you redecorate, the heavy-duty, scratch-resistant, vinyl panel can be easily and inexpensively changed to blend with your *new* color scheme.

INSIDE—EXCITING NEW DESIGN!

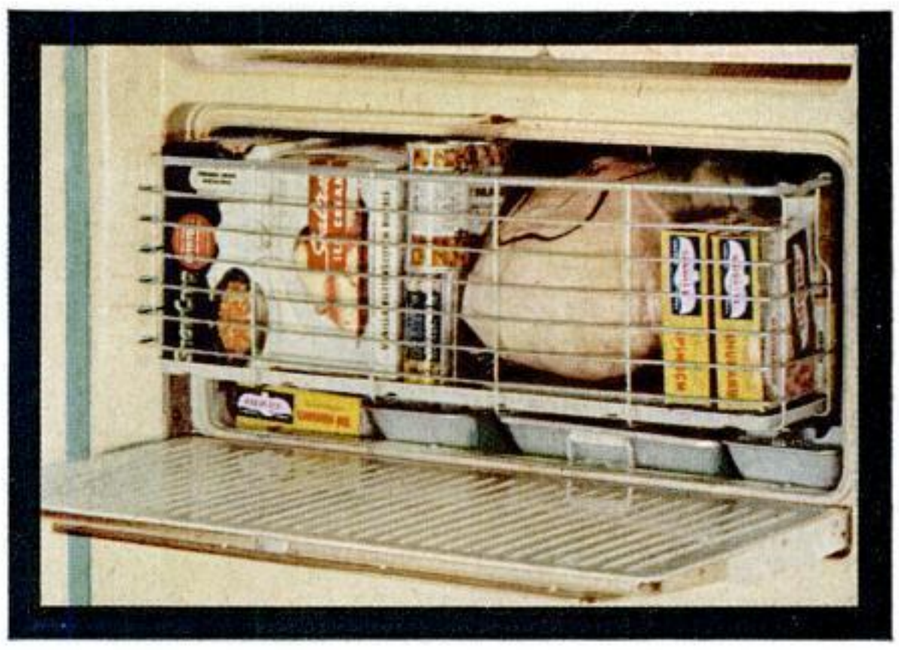
New Cold-In-Motion refrigerating system constantly circulates cold from top to bottom of refrigerator section to keep foods uniformly cold —chills them faster to keep them fresher. Completely automatic—no dials to set! *And* Automatic Cycle Defrosting means refrigerator automatically defrosts itself . . . even the defrost water is disposed of automatically.

There's a Westinghouse in an exciting new style to suit every family . . . in sizes from 8 to 13.2 cu. ft. . . . in 24", 28" or 32" cabinet widths . . . with large Freezer across the top or giant Freezer below . . . with Automatic Cycle Defrosting, Push-Button Automatic Defrosting or Frost-Free* Completely Automatic Defrosting. Prices start as low as $199.95. See your Westinghouse dealer. You can be *sure* . . . if it's Westinghouse.

See TV's Top Dramatic Show — Westinghouse Studio One



NEW STOOP-SAVER ARRANGEMENT... use-styled to keep the refrigerated foods used most often up top — at reach-in level. No stooping! Shelves roll out, too!



GIANT FREEZER BELOW holds 83 lbs. of frozen foods and ice cubes. Handy roll-out basket keeps foods in full view—easily accessible. New "Ice-Slice" Tray!



NEW SHOWCASE CRISPER at waist level keeps ⅔ bushel of vegetables dewy-fresh . . . always in view. Tilts down for reach-in convenience . . . lifts out for easy loading. Plus Meat Drawer, Butter and Cheese Keepers, and Fruit Bin.

WATCH WESTINGHOUSE

*WHERE **BIG** THINGS ARE HAPPENING FOR **YOU!***

LIVE BETTER ELECTRICALLY

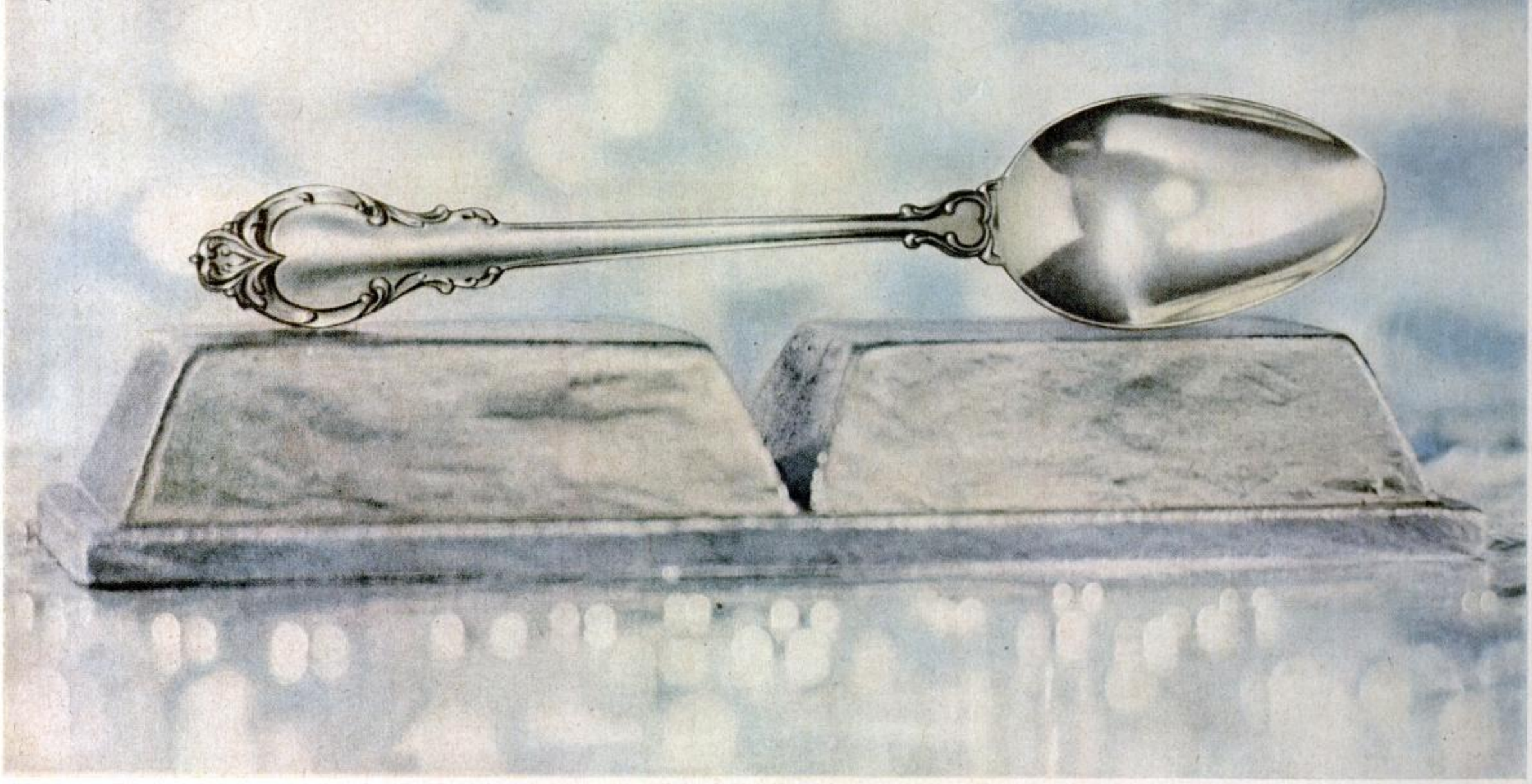
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Announcing the newest of patterns . . .

International sets the loveliest tables in America

Silver Fashion



New pattern blends romance with modern! It's as sentimental as moonlight and roses . . . yet so simple it's perfect with modern. You'll love it in DeepSilver, the new silverplate lavished with extra silver all over . . . and inlaid with sterling at touch points of most-used pieces. Service for eight, $100.

DeepSilver is also available in these patterns—all made in U. S. A.



A new concept in silverware . . . a new standard of quality! Holmes & Edwards

DeepSilver

Made by The International Silver Co.

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ODDLY SHAPED FOR TOMORROW'S USE

Craft will speed and hover

The most fantastic looking aircraft of the near future will not be the rocket planes designed to explore the fringes of space but strangely shaped machines that will turn new tricks for man inside the atmosphere. The designs on these pages are an engineer's conception of aircraft now in various stages of serious study. Looking like wingless tubes, barrels and giant electric fans, they will be both faster and slower than aircraft of today.

The ring-winged Coleopter (*right*), under study for the Navy, could operate from the back of a truck. It would rise vertically, powered by a jet engine. In horizontal flight its ring-wing would become a huge ramjet engine and reach speeds of 3,000 mph. The ramjet, used in several planes shown here, is basically an open-ended tube. Air rammed into it and compressed as the plane travels at high speed is mixed with fuel and ignited. The expanding gases thus created roar out the back to give forward thrust to the plane.

The aerial crane below is a development of the Army's flying platform (*p.114*). A number of these girdered together could lift tanks over rivers. In other new designs internal fans, rotating disks and venetian blind wings may enable high-speed planes to lower themselves gently to earth. Though the shapes of all these ideas are shown here only in drawing form, work has progressed so far that tests are under way to determine pilots' ability to fly vertically (*p. 114*), and at least one design, the flying platform, has been making regular test flights with a pilot aboard.

JOHN T. McCOY



ODD SHAPES CONTINUED



THE AERODYNE (LIFE, Jan. 9), wingless plane under study for Navy by Alexander Lippisch, has fans in belly which blast air downward for vertical take-off. It may fly horizontally with tail jet.

RAMJET WING, being tested by Otto Reder in Madrid, Spain, is a conventional lifting surface at low take-off speeds. It opens at front and back to become ramjet engine for high-speed power.

THE LEDUC RAMJET, under construction in France, is a flying tube that serves as the plane's body and becomes a giant ramjet engine at high speeds. It uses jet engines in wings for take-off.

VENETIAN BLIND WING, tested by the National Advisory Committee for Aeronautics, diverts propeller blast downward by means of retractable vanes to lift plane vertically off ground.

J.I.M.

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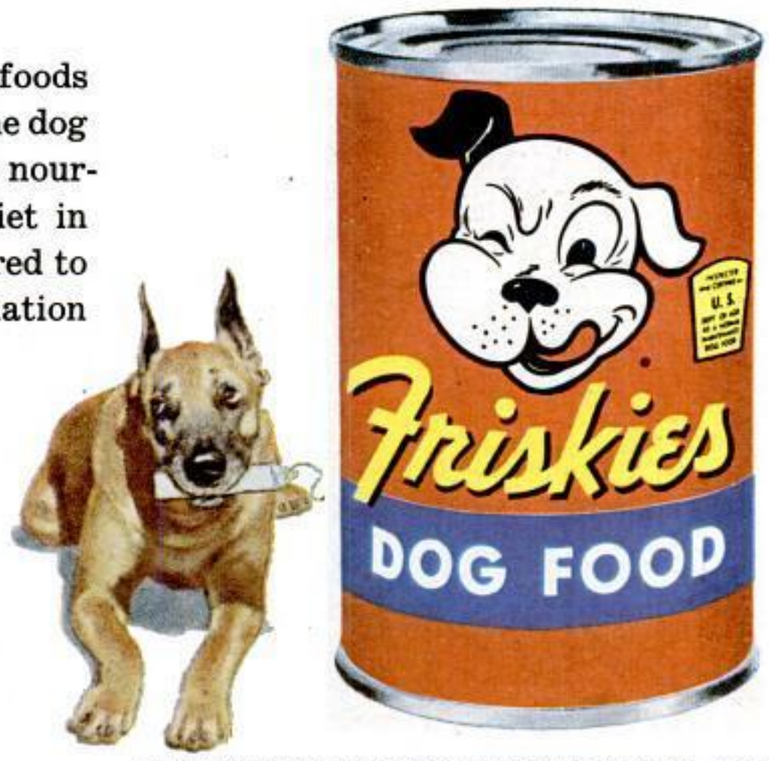


An original painting for Friskies by Douglass Crockwell

A frisky dog is a friendly dog...

Meat-loving dogs love FRISKIES!

...because there's more lean red horse meat in Friskies than any other single ingredient. It's the finest table-quality horse meat—including choice steaks, chops, roasts. So Friskies gives your dog the *meaty* flavor he craves, plus the high protein of fresh meat he needs! Actually, Friskies provides up to *twice the nourishment* of dog foods selling for only pennies less. Some dog foods simply fill; Friskies *fully* nourishes. Friskies is a complete diet in every respect. Friskies is prepared to the high standards of the Carnation Company and the U. S. Govt.
...for dog owners who care.



Only a canned dog food that fully nourishes can bear this U. S. Govt. Seal.

Another Carnation Quality Product

Friskies MEAL A Complete Dog Food

FOR VARIETY, FEED FRISKIES MEAL. Friskies Meal contains in convenient form all the food values of the finest steaks, chops and roasts. It is a *complete* diet. When mixed with water, 5 pounds of Friskies Meal provides more than 10 pounds of nourishing goodness.

Keep your dog frisky with Friskies

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36,000 GALLONS OF OIL...



....are piped through your AC Oil Filter every 5,000 miles!

Twice a minute when you're driving, all the oil in your car's crankcase will flow through a full-flow AC Oil Filter. That means a veritable pipe line of oil because, in 5,000 miles of driving, your filter is called upon to clean harmful dust, dirt, grit, carbon, metal bits out of the equivalent of 36,000 gallons of oil—a tremendous total. So finely do these AC Oil Filters work that they remove foreign matter even when it measures as little as 1/100,000 of an inch, yet they do not remove an ounce of the valuable detergents used in most fine motor oils today. Let this vast and thorough filtering job remind you of two things: the need for *changing* your filter every 5,000 miles, and the need for insisting on an AC Oil Filter—the best protection for your engine.

Watch BIG TOWN—NBC-TV

Change Your

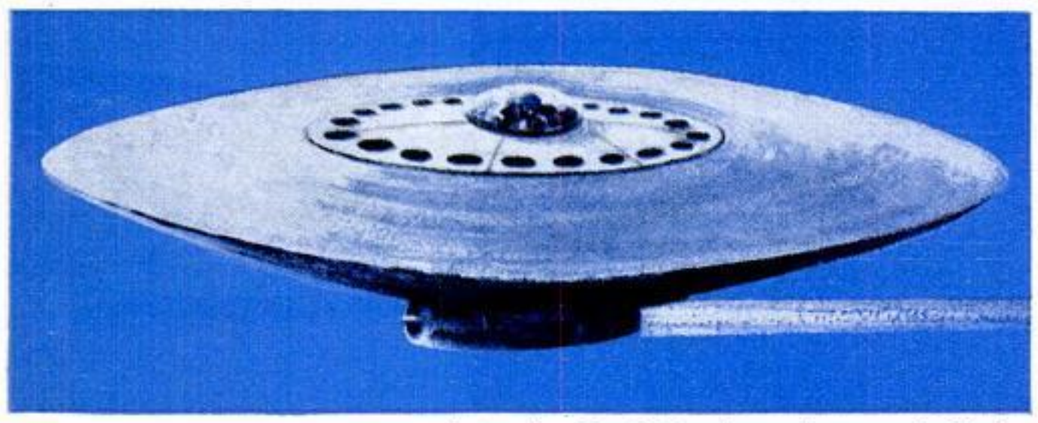


AC OIL FILTER Regularly!

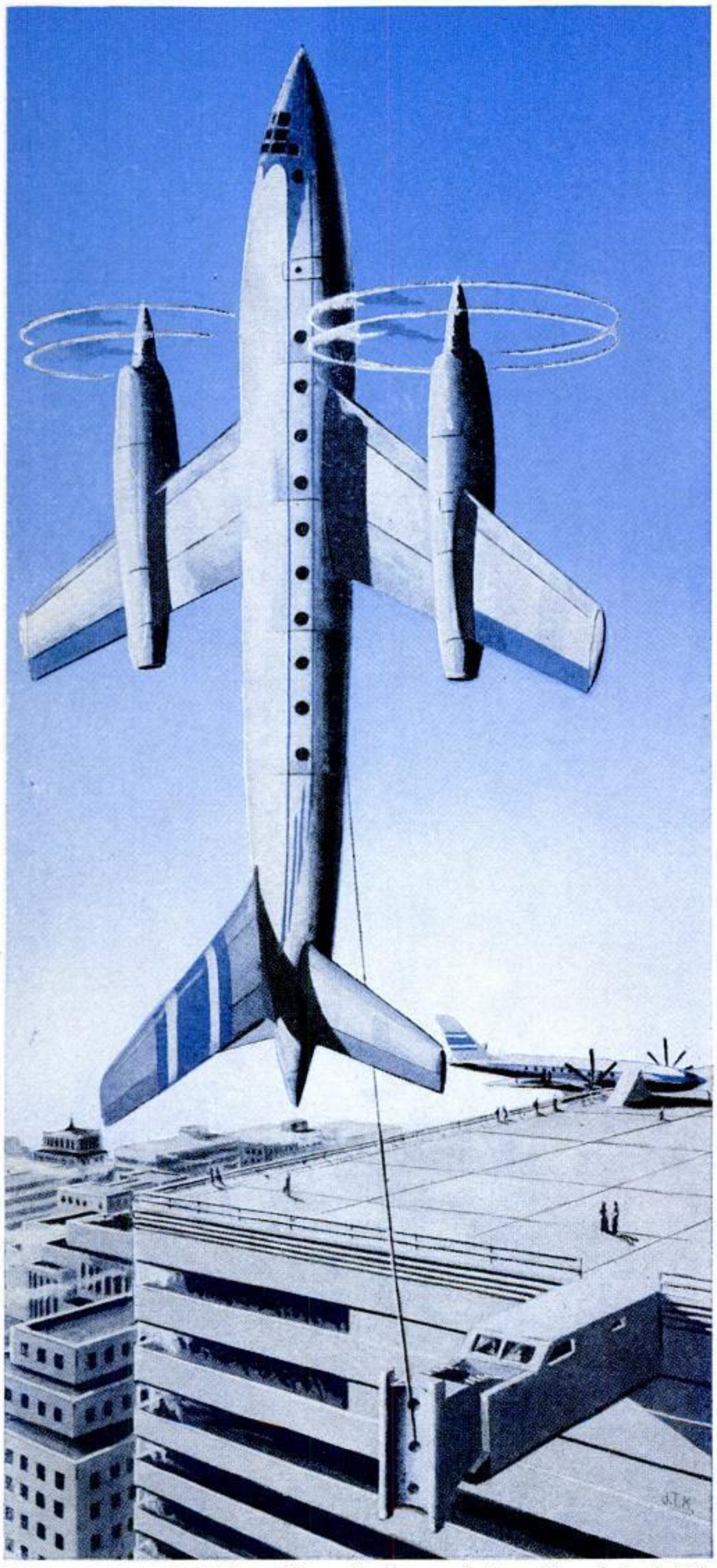
AC SPARK PLUG THE ELECTRONICS DIVISION OF GENERAL MOTORS

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ODD SHAPES CONTINUED



FRENCH FLYING SAUCER, a design by René Couzinet, rises vertically by means of the lift created by counterrotation of top and bottom surfaces. An underslung turbojet engine propels it horizontally. Pilot sits in bubble on top.

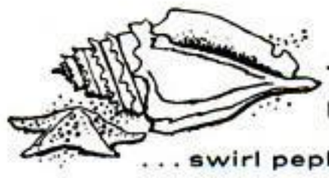


TILTABLE TRANSPORT would use landing method envisioned by British helicopter expert Raoul Hafner. It would have engines powerful enough to enable its propellers to act as helicopter rotors for both landings and take-offs. Hovering nose up when coming into a downtown port building (*right*), it would drop a line and be pulled into hinged dock which would tilt plane back to horizontal. Seats would swivel to keep passengers and crew always upright.

CONTINUED

When all you're wearing is a swim suit
be sure it's a Sea Nymph...





. . . and to give you the most glamourous look of all—this breathtaking sheath exquisitely fashioned in faille lastex . . . swirl peplum—lined in matching cotton print—lends exciting flair . . . flattering top has winged cuffs also lined in print. Up-lift inner bra. In black and choice of brilliant floral colors . . . Sizes: 32-38, **$12.99.**

At better stores everywhere.

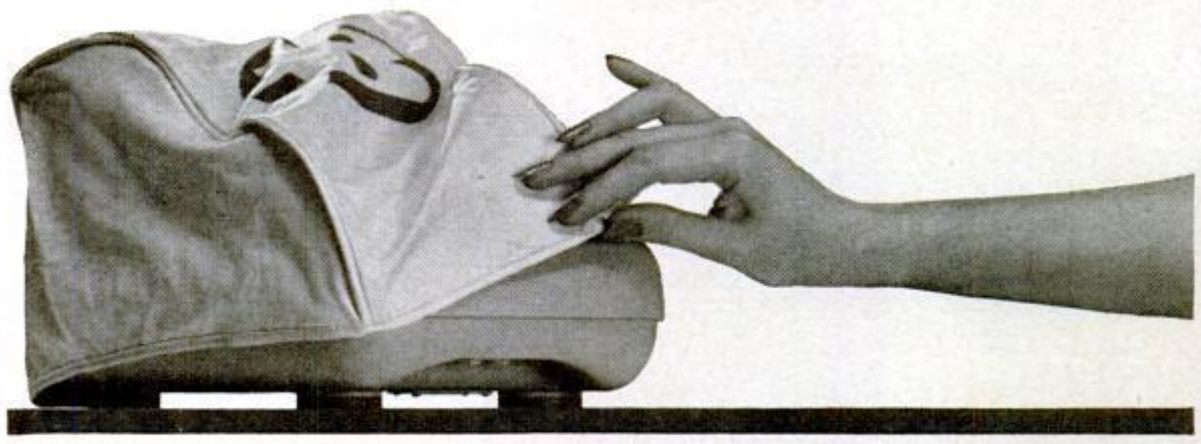
sea nymph
glamour swim suits

JORDAN MANUFACTURING CORP., 1410 B'WAY, N. Y. 18 • SEA NYMPH OF CANADA, 425 RIVER ST., MONTREAL

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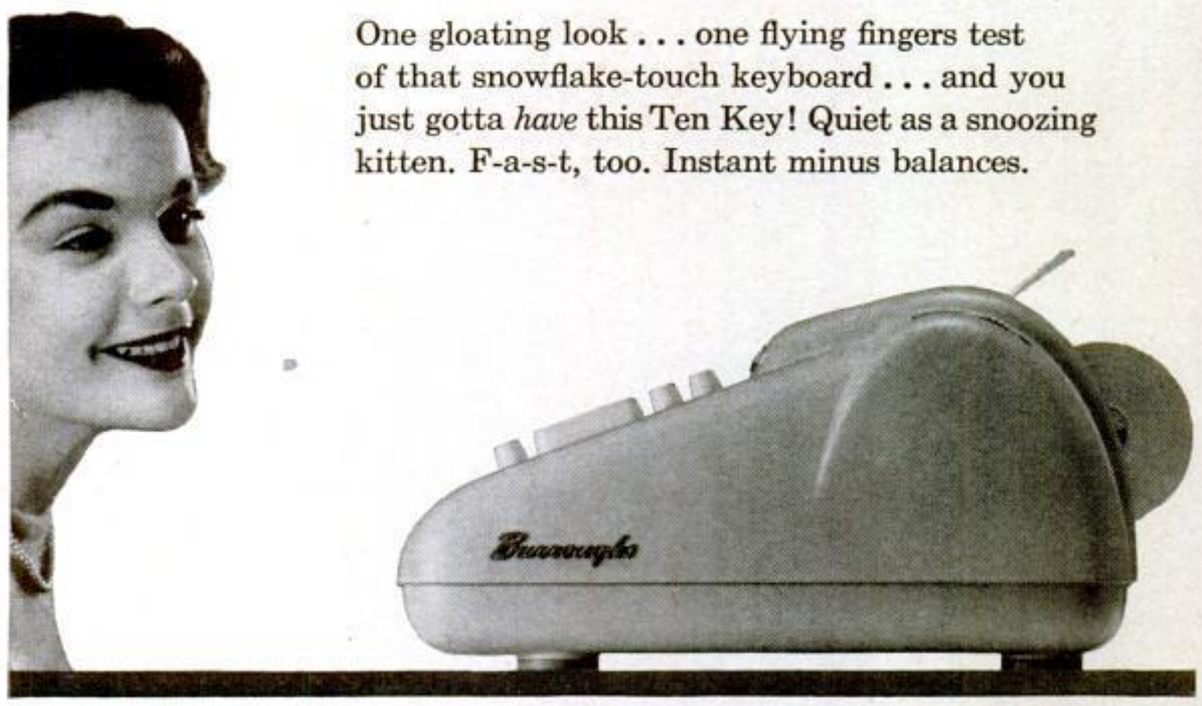
TEASE

One teasing peek at this Burroughs Ten Key adding machine—and you'll just *know* it's the machine for you. In your choice of Sea Mist Green, Capri Coral, Alpine Blue, Amber Gray.



SEES

One gloating look . . . one flying fingers test of that snowflake-touch keyboard . . . and you just gotta *have* this Ten Key! Quiet as a snoozing kitten. F-a-s-t, too. Instant minus balances.



PLEASE

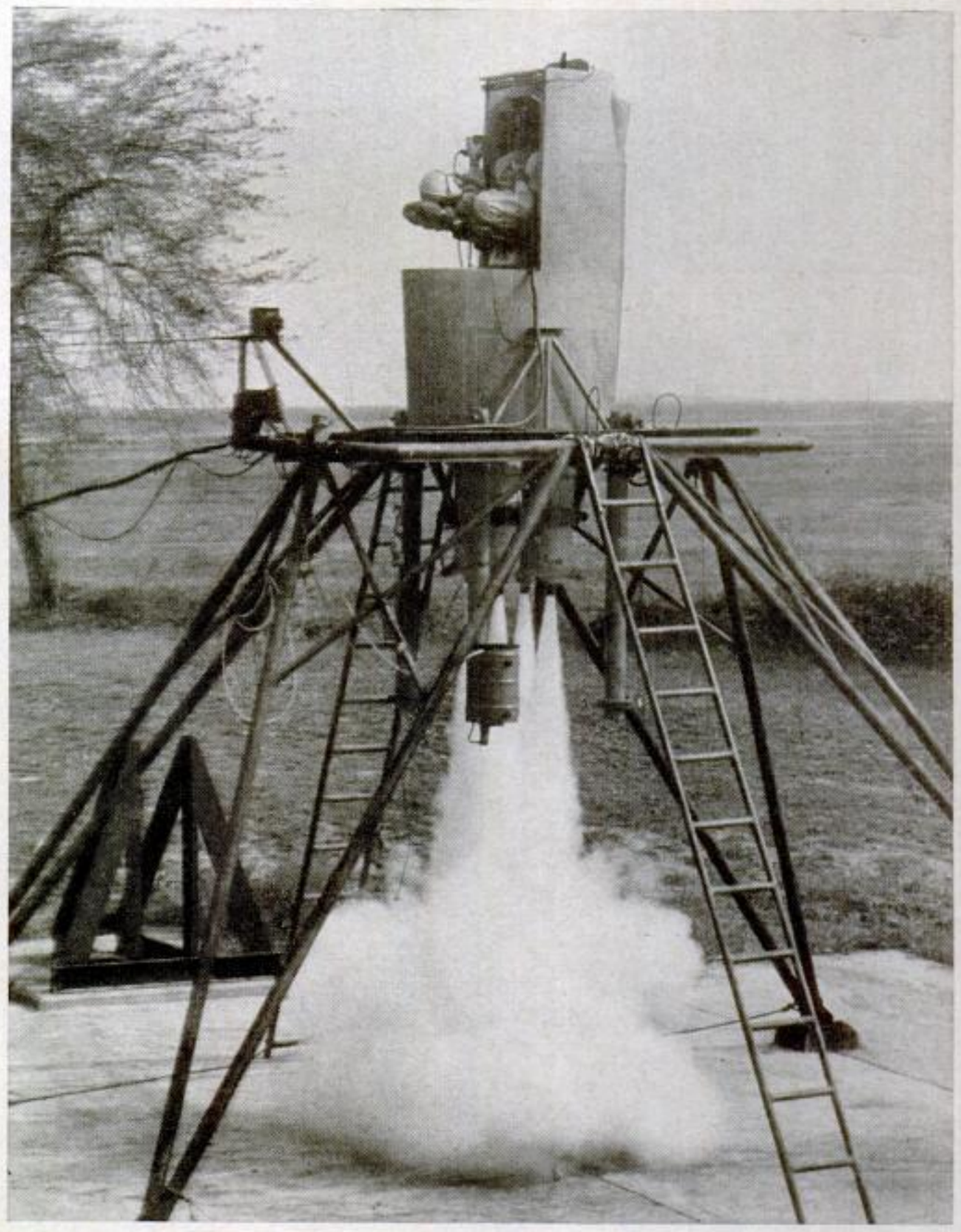
Engineered to *please* with year after year dependability . . . the Burroughs Ten Key is a cost-cutter *plus*—the way it masters kingsize work loads. Quickly pays for itself!



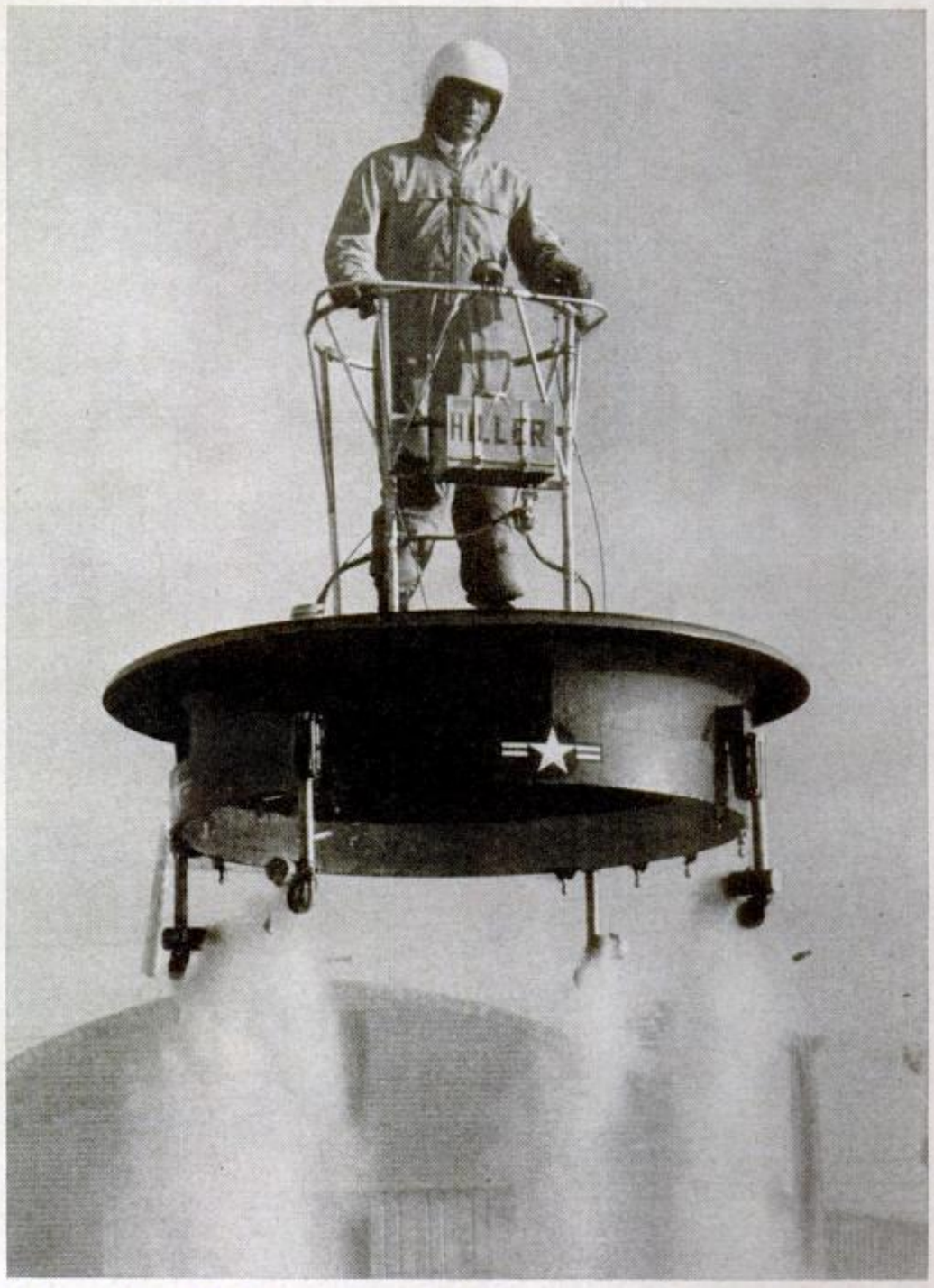
Burroughs Ten Key
Adding Machine

Our local branch or dealer is listed in the Yellow Pages. Burroughs Corporation, Detroit 32.

TESTING THE NEW PRINCIPLES



THE SWOOSHER, a cockpit mounted over rockets on tower at Naval Air Development Center, tests pilot's control of rockets for vertical take-offs.



FLYING PLATFORM under active flight test for Army by Hiller Helicopters, rises on a column of air blasted downward by ducted fan under pilot's feet.

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You can have a smoother, richer tan . . . faster with SKOL's exclusive new formula

GREATEST ADVANCE IN SUNTAN PRODUCT HISTORY!

Now—Have a Richer Tan in a single day—

with SKOL'S revolutionary new "RICH-TAN" Formula

This summer put a glow in your tan that will make all your other tans seem dull! The secret is in SKOL's exclusive new "Rich-Tan" formula.* This new kind of tan magic actually "lights up" your tan with vibrant life and luster . . . gives you a *richer* tan, *faster—more safely than ever before.*

New control factor

SKOL's new formula controls the reaction of your skin to the sun. It makes your skin more "receptive" to beautiful tanning . . . lets you tan more deeply without burning.

And you tan faster

With SKOL's new "Rich-Tan" formula you can get a tan in just a few hours!

Use SKOL's new "Rich-Tan" formula this summer. Discover how rich and deep and smooth your tan can really be.

*This formula is the exclusive property of SKOL and cannot be used by any other manufacturer. "SKOL" REG. U.S. PAT. OFF.

Now! SKOL's wonderful "Rich-Tan" Formula in 4 popular forms



SKOL Tanning Oil . . . Gives skin luster . . . prevents dryness. Also in Aerosol can.

SKOL Tanning Foam . . . Rich cream that softens, smoothes. Effective for dry skin.

SKOL Tanning Cream . . . Greaseless cream with a special skin softening ingredient.

Regular SKOL . . . Not oily. Doesn't pick up sand. Goes on neatly. The world's largest selling tanning lotion! Available in glass bottles or in handy new squeeze-spray plastic.

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Holiday on a Budget !

SUPER 88 HOLIDAY COUPÉ

So often seen in the smartest places! *And so easy on your budget!* It's Oldsmobile's Super 88 Holiday Coupe . . . a "wide-open" invitation to summer driving pleasure. With the lively action of Rocket T-350 power . . . quiet, smooth response of Jetaway Hydra-Matic* . . . and Oldsmobile styling leadership that fashions tomorrow's viewpoint. The most glamorous Holiday of your life is waiting for you *now* . . . at our showroom!

**Standard on Series Ninety-Eight; optional at extra cost on all other series*

A QUALITY PRODUCT BROUGHT TO YOU BY **YOUR OLDSMOBILE QUALITY DEALER**

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HANDY HELICOPTERS

Some far-fetched stunts show off versatility

The flying machine above, performing a ski-towing task usually done by motorboats, is engaged in a kind of far-fetched sales pitch for helicopters. To titillate civilian buyers, Test Pilot Phil Johnson of Hiller Helicopters, which sells about a fourth of the country's nonmilitary copters, puts his whirlybird to improbable uses. When it substitutes for a ladder in a pear orchard (*p. 119*), the helicopter provides a kind of comic relief from the awesome achievements of the air age. But Johnson's stunts, like the helicopter's invaluable work in the Korean war, suggest serious jobs that can be done by a gawky machine that goes straight up, flies forward and backward and even stands still in mid-air.

CONTINUED

New!

Crosley "Fresh and Frozen Food Centers"

specially designed for Supermarket Shoppers



Stock up on months of frozen meals, store away bushels of fresh things, bottles, baked goods . . . each in its favorite kind of cold.



CROSLEY SHELVADOR TWINS

practically put the supermarket in your kitchen!

These two separate go-together units are the absolute ultimate in refrigeration. The "ALL" Refrigerator is ALL for fresh foods . . . all 14 cubic feet of it. Because there is no freezer chest, you have 3½ extra bushels of room. And more in the deep door, complete with the Beverage Server.

The matching Twin, Crosley's Shelvador® Freezer, is all for frozen foods. Keeps 470 pounds within easy sight and reach. Use these Shelvador Twins side-by-side or separately. Each is only 31½ inches wide.



CROSLEY DUO-SHELVADOR

Refrigerator-Freezer All-in-One

A 13 cubic foot "Fresh and Frozen Food Center" in a single unit. Up top, a big 9.1 cubic foot refrigerator, with a 130 pound roll-out freezer below. Plus that deep, deep door, and the unique Crosley Beverage Server that serves ice water right through the door. Refrigerator *and* freezer defrost automatically in minutes, thanks to Crosley's new Hi-Speed Automatic Defrost. So fast, frozen foods stay frozen, never lose their vitamins or flavor.

Available in Color-Glo Yellow, Pink, Green, as well as White.

For the name of your nearest Crosley Dealer, call Western Union, Operator 25

CROSLEY

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HANDY HELICOPTERS CONTINUED]



GOING FISHING, Johnson and his sons, Bruce (*left*), 6, and Kurt, 7, rig their rods and reels in helicopter before take-off for lake that is difficult to reach by other means.

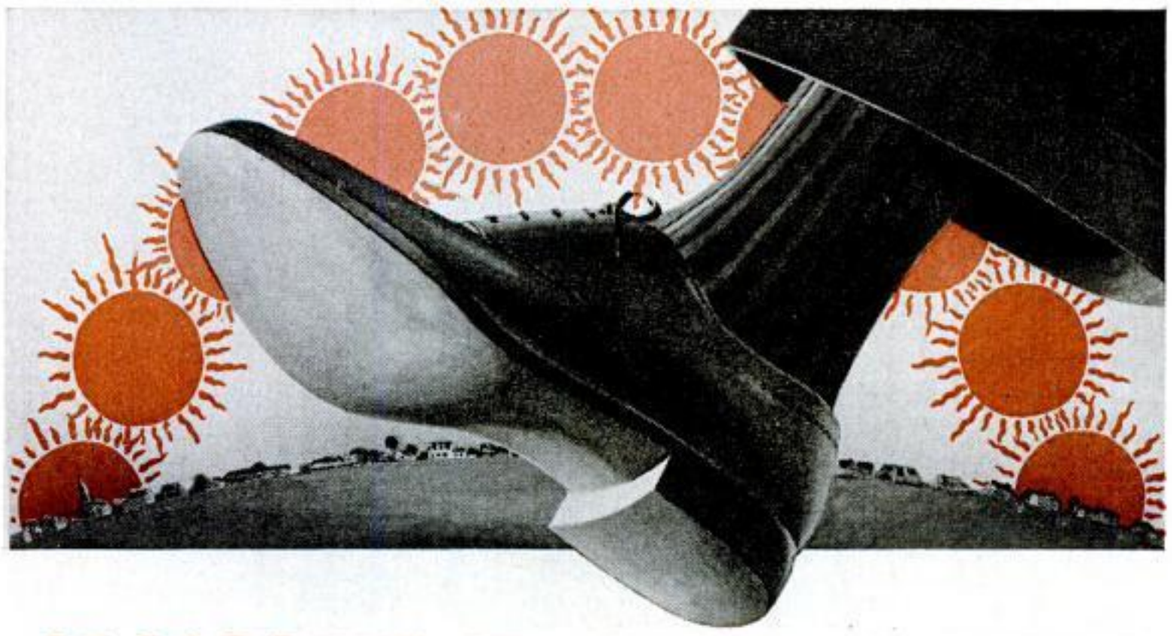


PRUNING TREE in a pear orchard, man on board gets at branches not easily reached from ground. Helicopters actually are used to spray some orchards and to dust crops.

CONTINUED

It's dangerous to neglect

Athlete's Foot



ABSORBINE JR. ONE-DAY RELIEF

Apply it daily in the morning, once again at night. Absorbine Jr. kills all the Athlete's Foot fungi it reaches . . . relieves your misery fast!

Here's proof of Absorbine Jr.'s fast action: An independent research laboratory grew millions of Athlete's Foot fungi in test tubes, doused them with Absorbine Jr. Five minutes later, *100% of the fungi were dead!*

And in carefully supervised tests on actual Athlete's Foot sufferers, doctors found Absorbine Jr. brought successful relief in a majority of cases—*regardless* of the type of Athlete's Foot fungi present.

Left untreated, Athlete's Foot can cost big doctor bills. At the first sign of cracks between the toes, apply Absorbine Jr. twice a day and relieve the misery fast! Buy it wherever drugs are sold.



America's No. 1 Relief for Athlete's Foot

ABSORBINE JR.

W. F. Young, Inc., Springfield, Mass.

Also relieves aches and pains of overexercised muscles, bites from non-poisonous insects, minor sunburn.



DUKE SNIDER SAYS IT'S T-riffic



Good? It's T-riffic—handsome variations on the classic T-Shirt that are sport shirts in themselves. Shown are the Crew-Neck, Torso and V-Neck—knit to fit to a T. *Dacron*-reinforced to keep shape through wash and wear.



Guaranteed by Good Housekeeping

MAYO SPRUCE

UNDERWEAR • SPORTSWEAR • SLEEPWEAR

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Now! For maximum safety...



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All-Nylon Cord Tire!

It's a masterpiece—this Mobil tire—made with all-Nylon cords, best insurance against blowouts. Tread molded with thousands of gripping edges for greater protection against skids. So quiet, soft-riding, long wearing, too! And it sells for only a little more than ordinary tires!

With every Mobil tire you also get an extra service—*Mobil Care*, the expert service supplied by your nearby Mobilgas dealer. This includes proper mounting and periodic checks for nails, cuts, bruises, wear, and correct inflation. Your best buy—Mobil Nylon tires!

THE NYLON

Mobil Tire

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FAR MORE THAN A FINE TIRE
BECAUSE IT'S BACKED BY MOBIL CARE!

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HANDY HELICOPTERS CONTINUED



DRAPING A CHIMNEY with strip of pennants, helicopter shows how steeplejacks could be spared many weary steps up ladder of a tall smokestack.



BEVY OF HELICOPTERS of conventional type hovers over field as Johnson gets ready for take-off in Hornet model which has ramjets on rotor tips.

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Sizzling Ideas for better barbecues outdoors or IN

Discover how Mazola® Oil makes everything —from salad to sauce—'specially delicious!



Let's have Shish Kebab! Quick marinating sauce: Take a clove of garlic, ½ cup of Mazola Oil, ¼ cup vinegar, ½ teaspoon salt, 1 teaspoon dry mustard, ⅛ teaspoon Worcestershire sauce and a dash of cayenne. Blend. Pour over cubed meat in shallow dish. Let stand 1 to 2 hours.

Now skewer chunks of beef or lamb alternately with cubes of vegetables. Brush with marinating sauce. Place on pre-heated grill or broiler. Broil 10 to 15 minutes, turning occasionally until tender.

Approach your barbecue with a spirit of adventure—and give it a twist of your own in the serving. But remember, for barbecuing . . . for baking . . . for salad dressings . . . nothing gives food wonderful "golden goodness" like Mazola Oil.

EASY-DO BARBECUE SAUCE

2 tbsp. Mazola Oil
¼ cup chopped onions
1 tbsp. Worcestershire sauce
1 tbsp. sugar
½ tsp. salt
2 tbsp. lemon juice or vinegar
½ cup water
1 cup chili sauce

Cook Mazola and onions over low heat, stirring frequently, about 10 minutes. Add remaining ingredients and simmer 15 minutes, stirring occasionally. Remove from heat. Makes about 1½ cups.

Barbecued chicken: Brush chicken with Mazola and place on grill or broiler rack. Cook, turning often. Baste frequently with barbecue sauce during cooking. Cook until tender. Serve with hot barbecue sauce.

Hint to remember—Brush your meat or fish with Mazola *before* you place it on the grill. This keeps meat from sticking. Mazola makes all meat delicious and juicy on the inside—crusty and brown on the outside.

COUNTRY GARDEN DRESSING

(Make it right in the bowl!)

½ clove garlic
¼ tsp. prepared mustard
1 tsp. salt
Few grains pepper
¼ tsp. Worcestershire sauce
1½ tbsp. vinegar
4 tbsp. Mazola Salad Oil

Drop garlic clove in salad bowl. Add prepared mustard, salt and a few pepper grains. Blend thoroughly with fork. Add Worcestershire sauce, vinegar and Mazola. Beat with fork until thoroughly mixed . . . now add mixed greens and toss. For more than four servings, double recipe.



Mazola

the golden all-purpose oil for

frying . . . baking . . . salads



actual size

New! Exclusive offer

HOLIDAY STEAK KNIVES

set of **6** for **$1.00** and 1 Mazola label

Wonderful new idea . . . set of 6 Quikut steak knives with 6 assorted pastel-colored handles! Harmonize beautifully with any setting. Handles are guaranteed not to come off. Extra sharp stainless steel blades. A marvelous value (not available elsewhere), so send for your set today. Use this handy order form.

MAZOLA, BOX 22A, FREMONT, OHIO

I am enclosing $_____ and ____ Mazola Oil label(s). Please send postpaid _____ set(s) of 6 Holiday steak knives, assorted handles. *(Send $1.00 and 1 label for each set.)*

NAME _____
(Please Print)

STREET _____

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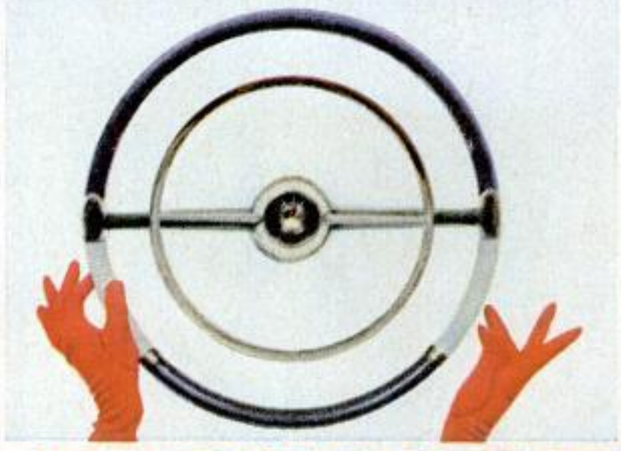
CITY _____ STATE _____

Offer expires August 30, 1956. Offer void in any state, territory, or municipality where prohibited, taxed or otherwise restricted.

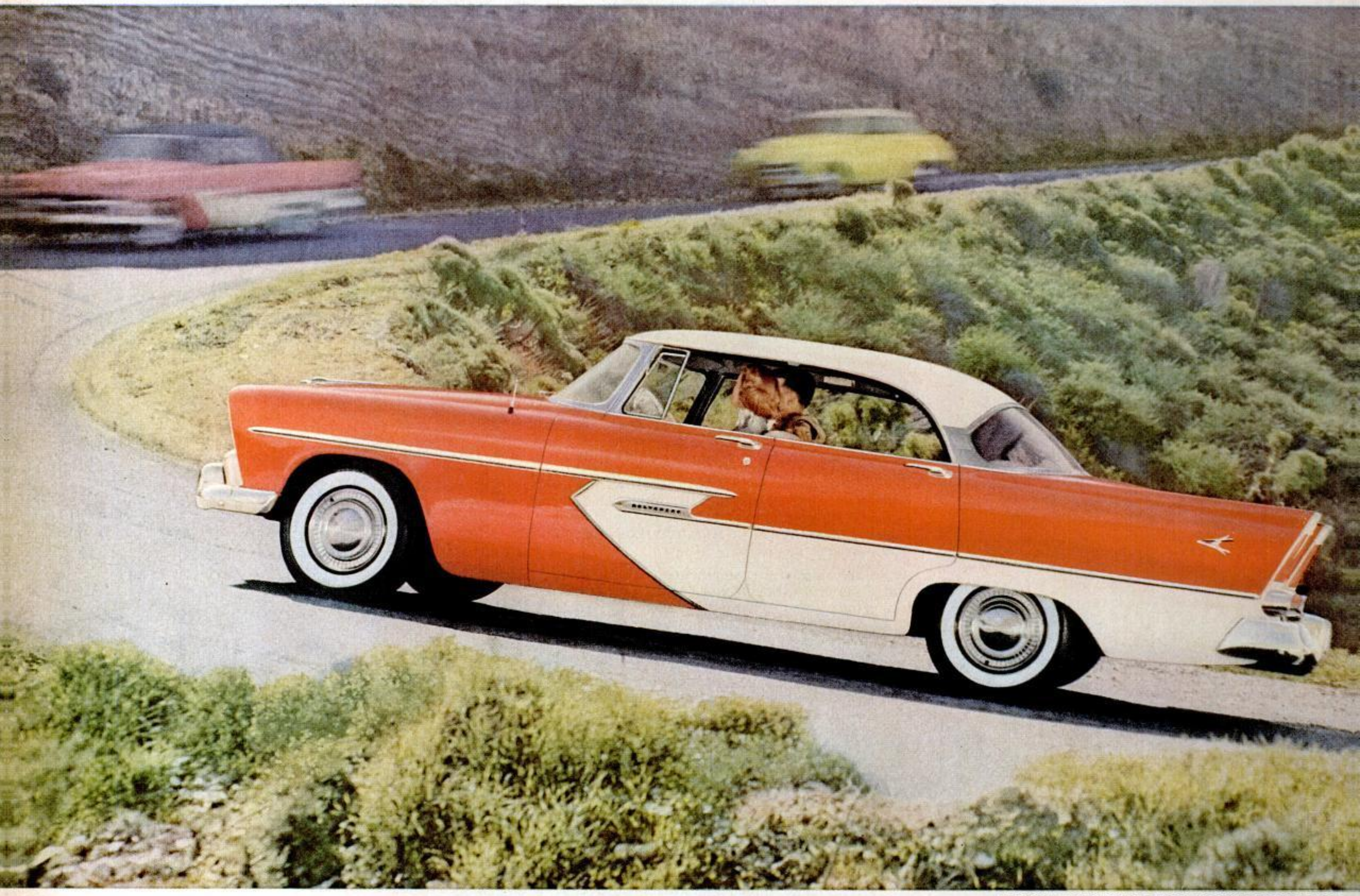
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ONE OF 5

FORWARD LOOK VALUES OTHER CARS DON'T HAVE!



FULL-TIME POWER STEERING



PLYMOUTH BELVEDERE 4-DOOR HARDTOP SPORT SEDAN

1. FULL-TIME POWER STEERING! Other cars still haven't caught up with it! It helps you 60 minutes of every driving hour—not just in parking, but every road adjustment. Compare Chrysler Corporation's *full-time* power steering with the in-and-out part-time devices of other cars!

2. Pushbutton PowerFlite—just press a button and you're set to *go!* Its simple mechanical design has been fully tested and perfected. The driving advance of the year!

3. Greater power longer! No other American passenger car V-8 engines have the extra efficiency of dome-type combustion chambers, such as modern airliners use.

4. Safest brakes! Chrysler Corporation brings you the biggest advance in brakes in 25 years! Easier, surer, less adjusting, longer lining life!

5. Brightest design note in cars this year! THE FLIGHT-SWEEP—one clean aerodynamic sweep from headlight to upswept rear fender!

For the greatest values today, see your dealer in Plymouth, Dodge, De Soto, Chrysler and Imperial.

CHRYSLER CORPORATION

PLYMOUTH · DODGE · DE SOTO · CHRYSLER · IMPERIAL

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A CAPTAIN OF THE OCEAN AIR

With a versatile crew, Portlock Wilson makes world travel a routine

Leon Portlock Wilson sat in an Atlanta office in 1940, two years out of Georgia Tech, looked glumly across the room at his boss and muttered, "Portlock boy, you can't spend 20 years just easin' from this side of the room to the other." He quit and ever since has eased from one side of the world to another, isolated from other men by miles of dark and lonely and capricious space in an office of which he is absolute master. Wilson (*above right*) shares his office, the cockpit of a Pan American DC-7B, with copilots like Hal Swinburne (*left*). As a transatlantic captain he is one of the men who has helped the air age come of age, making the air lanes of a wide world as familiar as the short cut down to the candy store.

The requirements for the job are considerable. Besides being an excellent pilot, he must also be a good engineer, navigator, boss of a versatile crew of eight and a diplomat. Wilson, at 39, is an effortless master of his job for he loves it. "I get a lot of time home with June and the kids," he explains, "and I get a lot of time out."

"Time out," on a recent 13,000-mile, seven-day flight, meant Paris, Rome, Beirut, Tehran and back to Idlewild. The flight's success was guaranteed by any captain's qualifications. But beyond these lie other factors —the crew's morale, the passengers' satisfaction—that mark Portlock Wilson's pride as a captain. "Let me tell you what. If people said, 'Aw, nuts! We're flying with old Portlock!' I'd just up and quit." The thought is one that Portlock can entertain with some equanimity for he is rated highly by Pan American, which pays him $20,000 a year for his time and his many talents.

Photographed for LIFE by LEONARD McCOMBE

CONTINUED

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PREPARING FOR TAKE-OFF, Wilson (*back to camera, picture at left*) discusses flight with all his crew except Engineer Engle, who is checking over the plane (*next picture*). In the cockpit (*center picture*), Wilson (*left*), Engle and Copilot Swinburne get set to take the plane up. Swinburne calls off the instruments that must be checked and the time: "Clocks, I got 17 [minutes after the hour]." "I got 17½," responds Wilson. Engines are started separately and Wilson looks out



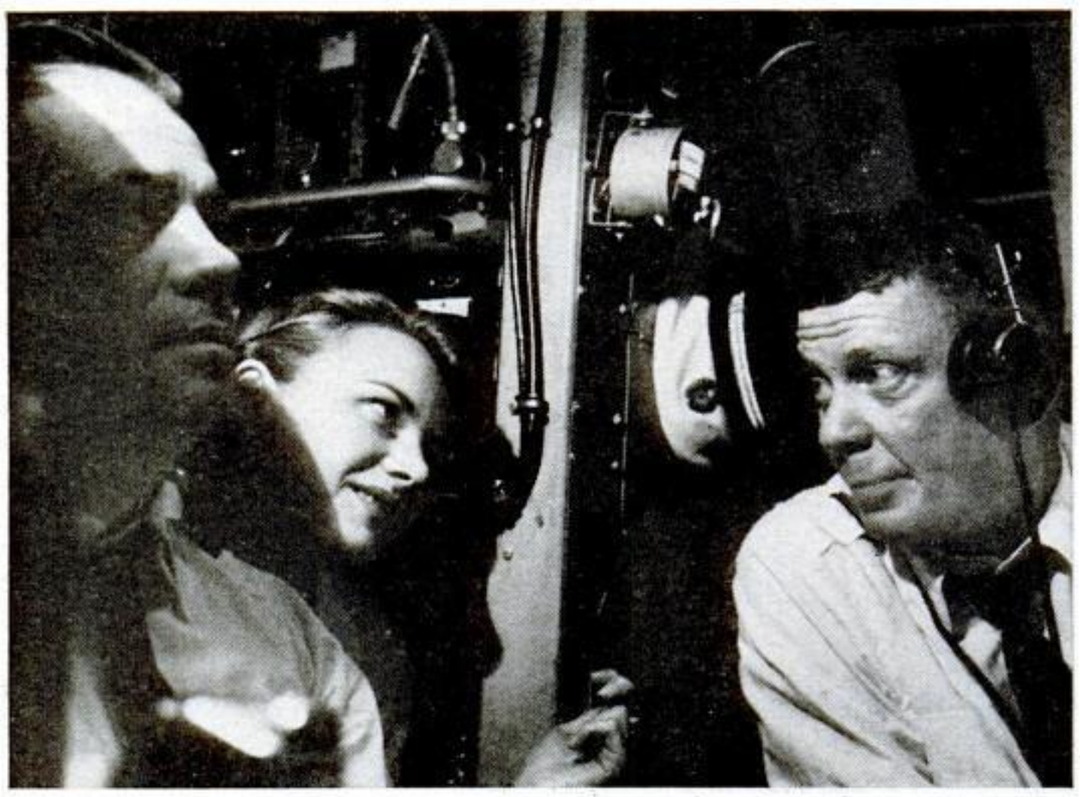


A busy crew and a peaceful flight

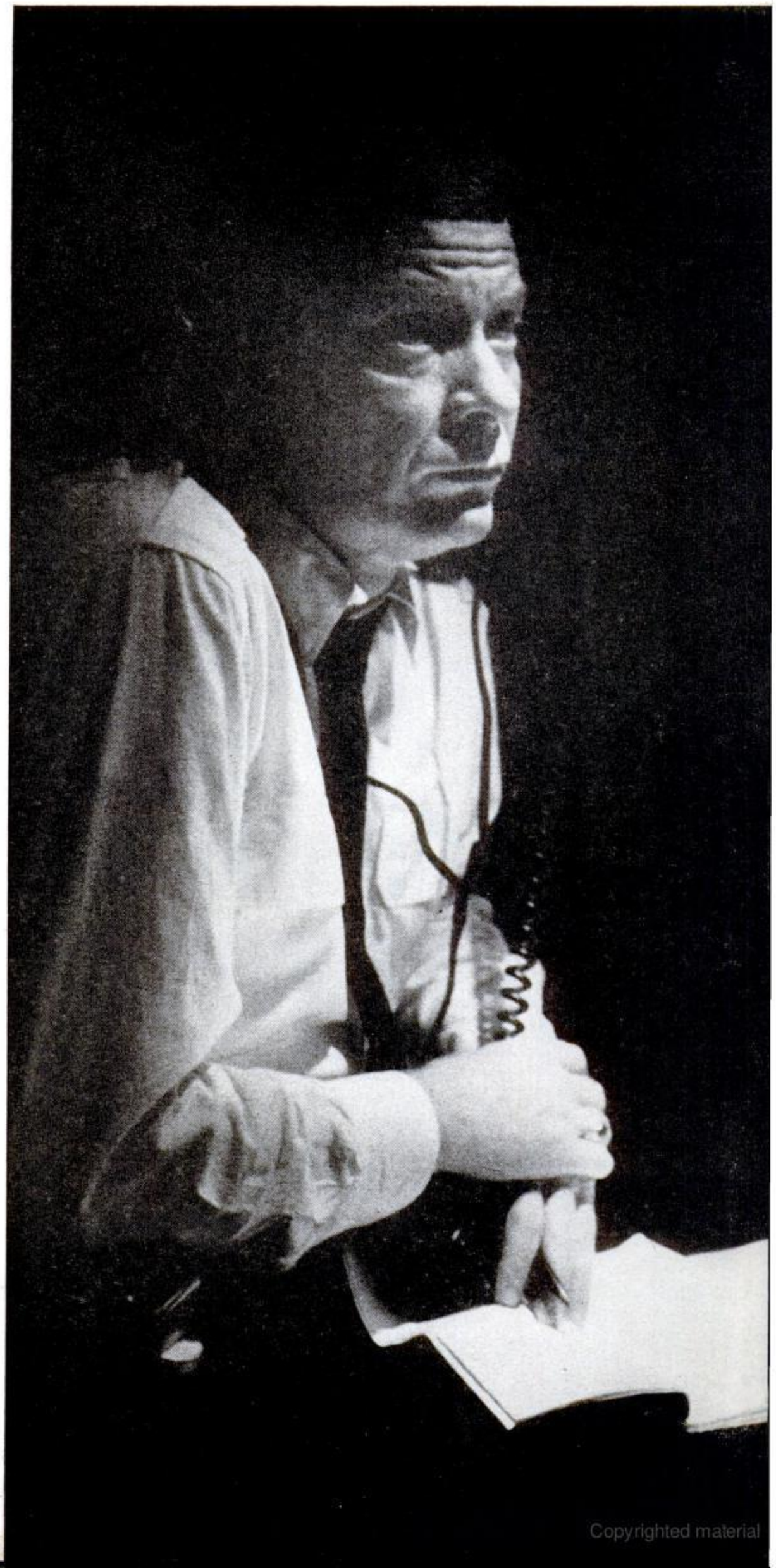
Arriving at Idlewild, Wilson met his crew: Copilot Swinburne, Third Officer Jack Odell, Navigator Elwood Hochella, First Flight Engineer Gail Engle, Second Flight Engineer Matt Risoldi, Purser Gertrude Vasel, Stewardesses Joan Bellas and Ruth Kent. Then he discussed his route with the dispatcher. Told he might meet "isolated CBs" (cumulo-nimbus, or thunderheads), Wilson needled him to determine how carefully the route was chosen. "An isolated CB can wreck that airplane, Sporty. I just wondered if you all paid attention to the weather rather than just the quickest way to get to Paris. Those people would rather not make it on schedule if they have to bang their heads on the ceiling all the way." Satisfied about his route and his passengers' comfort, Wilson took off.

Hour after hour in the air Hochella pored over his charts, computing Clipper 62's position by half a dozen instruments and by weather ships "Charlie" and "Jig" on the Atlantic below. Periodically the engineers noted fuel consumed. Spelling one another, Wilson, Swinburne and Odell kept a constant watch on the automatic pilot and adjusted their course.

Like any other well-run office, Portlock Wilson's operates smoothly and quietly, "just like any other job. We don't go much for that me-and-God stuff. But sometimes when you're coming in, and there's a fog and all, or maybe, you know, a rough cross wind and you're holding the wheel, your palms get a little bit moist." With or without sweat, Wilson brings his Clipper in and a new mood comes over him. "While you're flying you're making decisions all the time. On the ground you want to relax."



OFFERING A SANDWICH, Purser Gertrude Vasel looks solicitously at Wilson as Engineer Engle (*left*) checks the fuel gauges. "Gertrude? Umm. I'd love one of your cheese sandwiches. These empty-belly landings are wearing me out."



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at Number 1: "Ready on one! Turning . . . switch on!" Engle reaches up (*picture second from right*) and turns ignition. After the plane taxis to the runway, Wilson calls, "O.K., let's have at it." Leaning forward Engle pushes the throttles open. With his finger marking air speed Swinburne calls out, "V-1," the speed (110 knots) beyond which they are committed to take off. Seconds later (*right*) he calls, "V-2," take-off speed (124 knots) and Wilson lifts the plane up.





TUMBLING TRAYS are gathered up by Gertrude Vasel and Joan Bellas after Jack Odell made a fast take-off that tossed them from their galley racks.



MIDNIGHT COFFEE, while the passengers sleep, is given to Wilson by Purser Vasel. Because cabin air is dehydrating, crews need liquid frequently.



AISLE OBSTACLES, early rising Billy and Gary Helseth, force Stewardess Ruth Kent to step gingerly out of the way as she carries morning coffee.



ASLEEP ALOFT, Stewardess Bellas occupies top bunk, Wilson a lower one, "to get out fast if anything happens, preferably without breaking a leg."

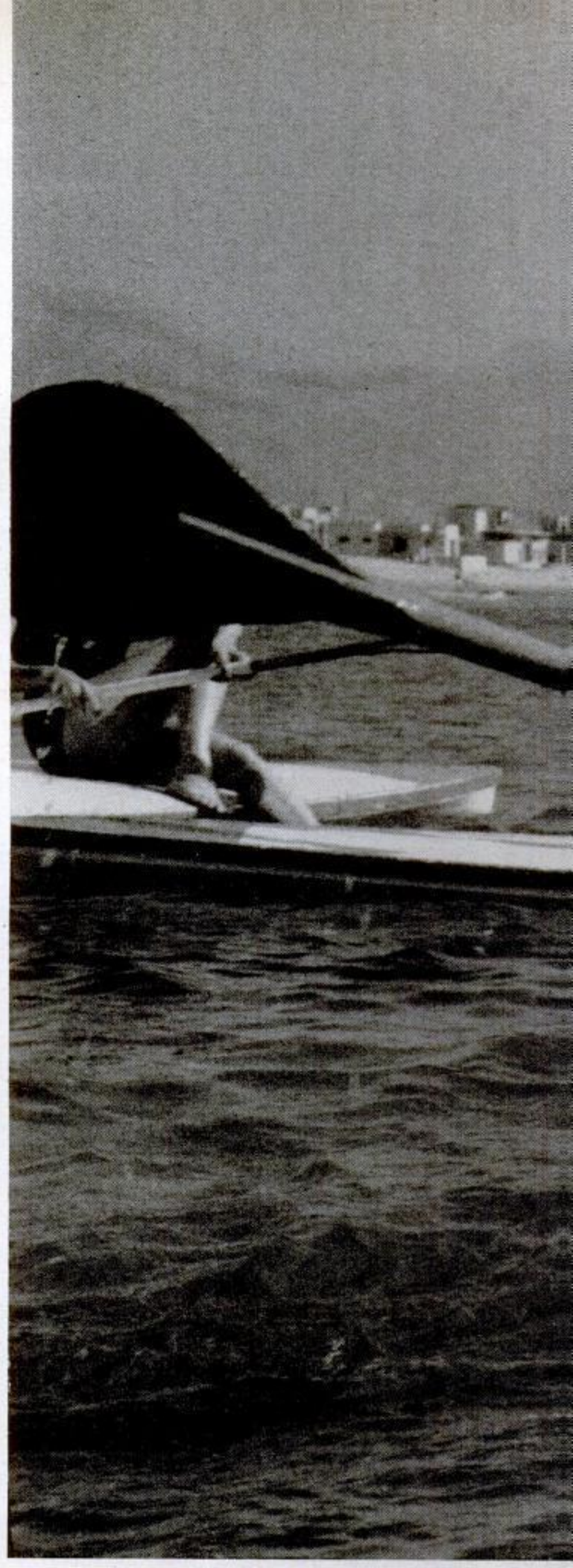
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Sights and sport in the East



OVER IRAN, Hal Swinburne contemplates a map of the Bible lands as he eats lunch. "Back up north of Tehran is Mount Ararat," he muses, "where the Ark landed. At least that's where they think it did. It makes sense to me because you can see signs of erosion all over here where the water must have been. That's why I like this country to fly over. I can sit up here for hours and dream, thinking about it."



AT THE CREW'S FAVORITE BEIRUT BEACH,



ATOP A MOSQUE in Tehran, Wilson and the engineers edge around a mosaic-covered minaret. Later, having had no breakfast, they bought one of the three-foot sheets of bread sold along the streets.

IN BEIRUT SHOP, Gertrude Vasel examines Damascus brocades. On a later flight the girls can take their material to a favorite dressmaker in Lisbon, who completes a cocktail dress for less than $25.

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WILSON, PURSER VASEL AND JACK ODELL CAVORT IN THE MEDITERRANEAN ON THE FLAT KAYAK-LIKE BOATS THAT THEY RENT FOR 30 CENTS AN HOUR



PUFFING A WATER PIPE, called a hubbly bubbly, Hal Swinburne enjoys a smoke and some Middle Eastern hors d'oeuvres at Mansour, a favorite nightclub in Beirut which he discovered several years ago.

SIGN OF MIDEAST UNREST is visible at Damascus airport where Wilson eyes a contingent of Syrian troops. The crew spent five hours in Tehran, the end of the line, returned via Damascus to Beirut for two days of rest before flying back to Paris. Landing in Beirut, Wilson looked slyly at Swinburne and mimicked the hot pilot talk of barnstorming days: "Well, Hal, we cheated death again."

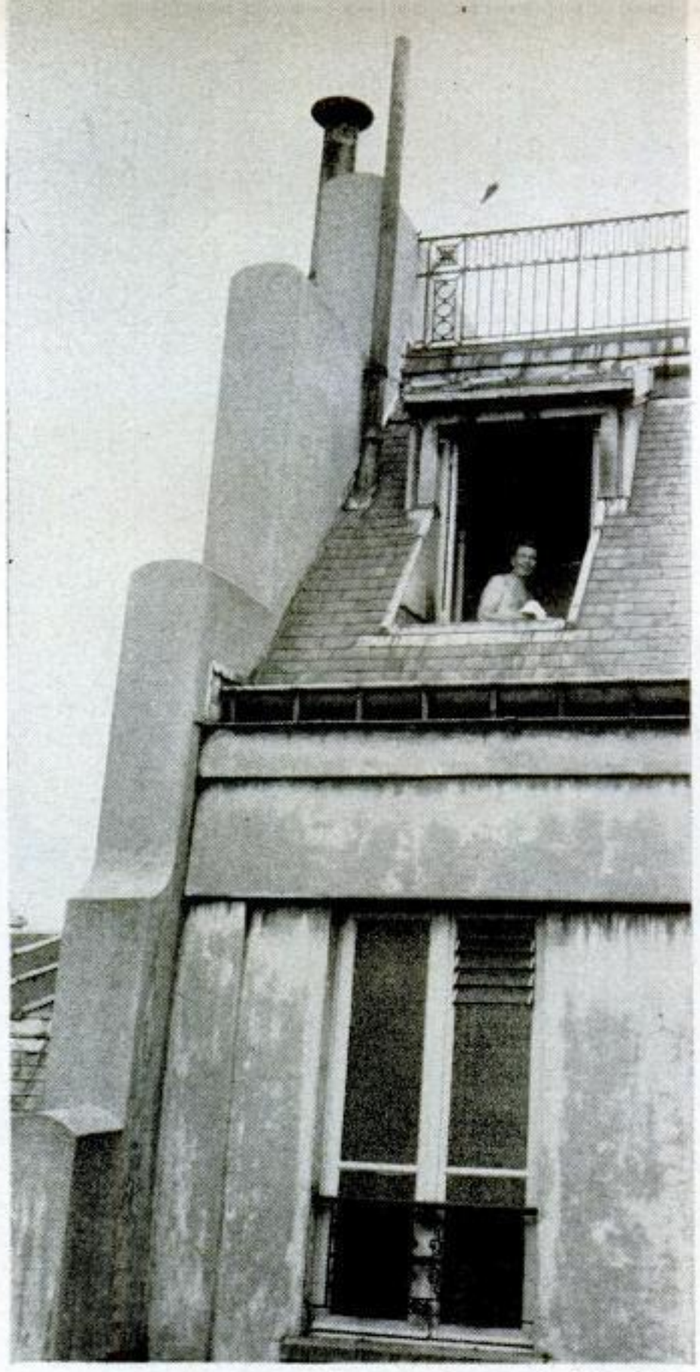
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A day for pleasure in Paris



OVER PARIS, Wilson calls Orly airfield for clearance to land. It was delayed and Wilson muttered, "This airport's crazy. You never know what you're going to do until the last minute you're doing it."



A ROOFTOP VIEW of the city is provided by Wilson's room atop the crew's hotel, the d'Iéna, near the Arc de Triomphe. He arrives in Paris about 10 p.m., leaves for New York the following evening.



A LUXURIOUS BATH in one of the Hôtel d'Ièna's six-foot-long tubs is the first waking thought of Co-pilot Hal Swinburne, who "never saw a tub like this back in West Virginia." Stretching out almost full length, he reads a copy of *Aviation News*, is offered a cup of coffee by roommate Jack Odell. A modern jazz fan, Swinburne spent the previous evening visiting some of the Left Bank cellar clubs.



IN PAINTER'S STUDIO, Wilson looks at paintings by Lutka Pink, who recently had a highly successful show. He asked her what she was trying to do and how she told which side of a painting

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was up. The question provoked several hours' discussion of modern art, and Wilson concluded that he liked the paintings, but "you've got to look at them a while." He left thinking he might buy one.



AT A SIDEWALK CAFE the three pilots stop for a lemonade before dinner and the flight back to New York. Aware of the work ahead, crews drink nothing stronger during the 24 hours before flight time.



TIRED TRIO, Engineer Matt Risoldi and Stewardesses Joan Bellas and Ruth Kent, sits exhausted on a boulevard bench after an afternoon of climbing about the Eiffel Tower and shopping for perfume.



DINING BEFORE TAKE-OFF, the crew gathers at the Doumel, near the Eiffel Tower (*left*). When Ruth Kent complained of her feet, Odell muttered, "That's from wearing those crazy mambo shoes."

HEADING HOME, Wilson taxis out in a rainstorm (*below*). Next day he landed at Idlewild. Asked if he were through with the radios, Wilson replied, "As a matter of fact, we're through with the airplane."



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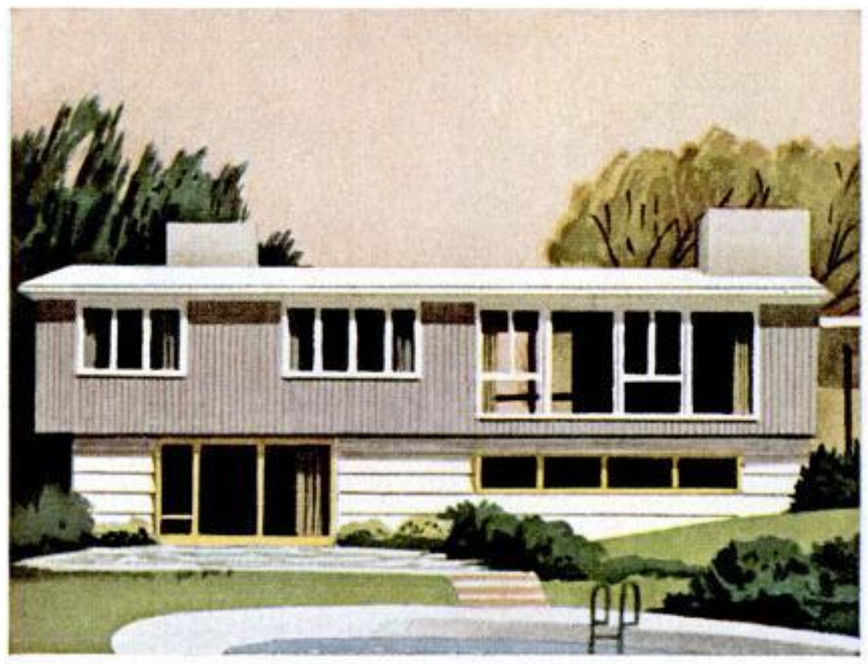


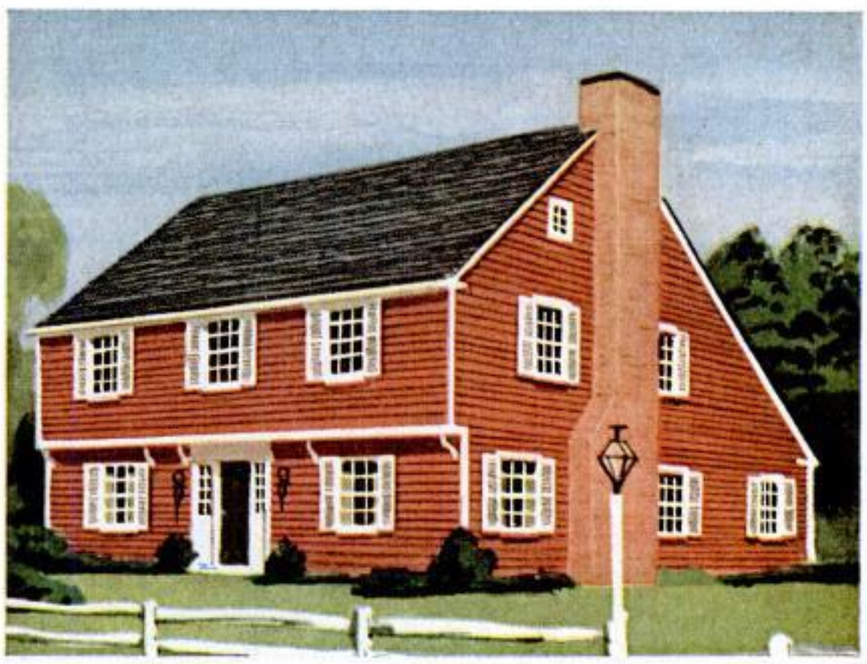
HUGS AND A SMILE greet Portlock Wilson as he is welcomed home in Huntington, N.Y. by daughters Carol and Margi and his wife June. "At home," he says, "I laze around, figuring a way out of all the things Junie's got lined up for me to do. Sometimes I just stand in the yard watching the briefcase brigade go by."

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Today... houses are wearing brighter colors

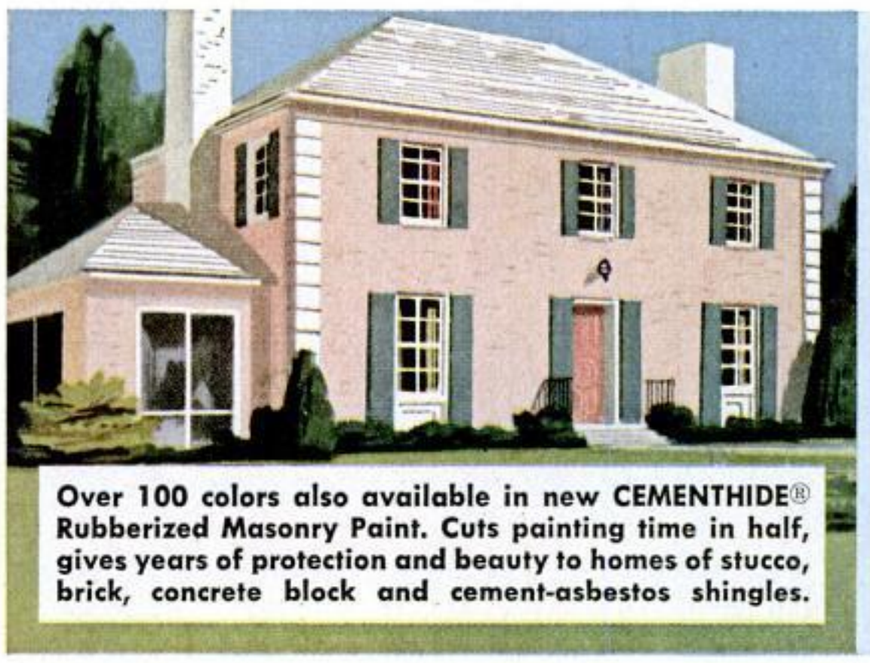
Wide new range of modern Pittsburgh Maestro Colors® invites you to give your home a distinctive and smart new color plan.





More than 100 colors in Sun-Proof® House Paint





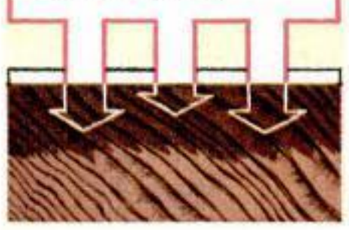
Over 100 colors also available in new CEMENTHIDE® Rubberized Masonry Paint. Cuts painting time in half, gives years of protection and beauty to homes of stucco, brick, concrete block and cement-asbestos shingles.

For the first time now more than 100 Maestro Colors are available in the famous house paint that looks "just-painted" far longer.

Important paint facts that will save you money

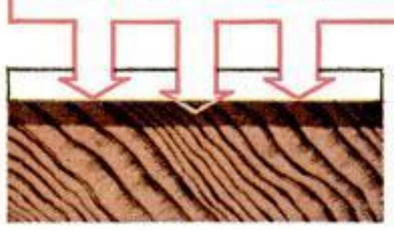
Sun-Proof House Paints made with Vitolized Oil® look better longer, add years to the life and dollars to the value of your home.

1. Much of the oil in ordinary paint goes into the wood being painted, leaving the paint film starved and brittle . . . ready to crack and peel!



2. After long research and tests Pittsburgh developed exclusive Vitolized Oil that controls oil penetration!

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4. That's why you get extra years of service when you insist on SUN-PROOF House Paint.

5. Because of discoloring fumes in the air wherever fuel is burned, Pittsburgh uses special pigments to make SUN-PROOF fume resistant!

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They'll line up and L-O-V-E it—when the cereals are

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It's Standing Room Only—when Post Cereals are the main feature of the meal! And roasted, toasted, popped or puffed, they rate raves from the leading man right down to the tiniest extra—because they taste so superwonderful. Yes, ma'am—Post-marked cereals deliver a performance *your* lineup will *love!*

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Eating!

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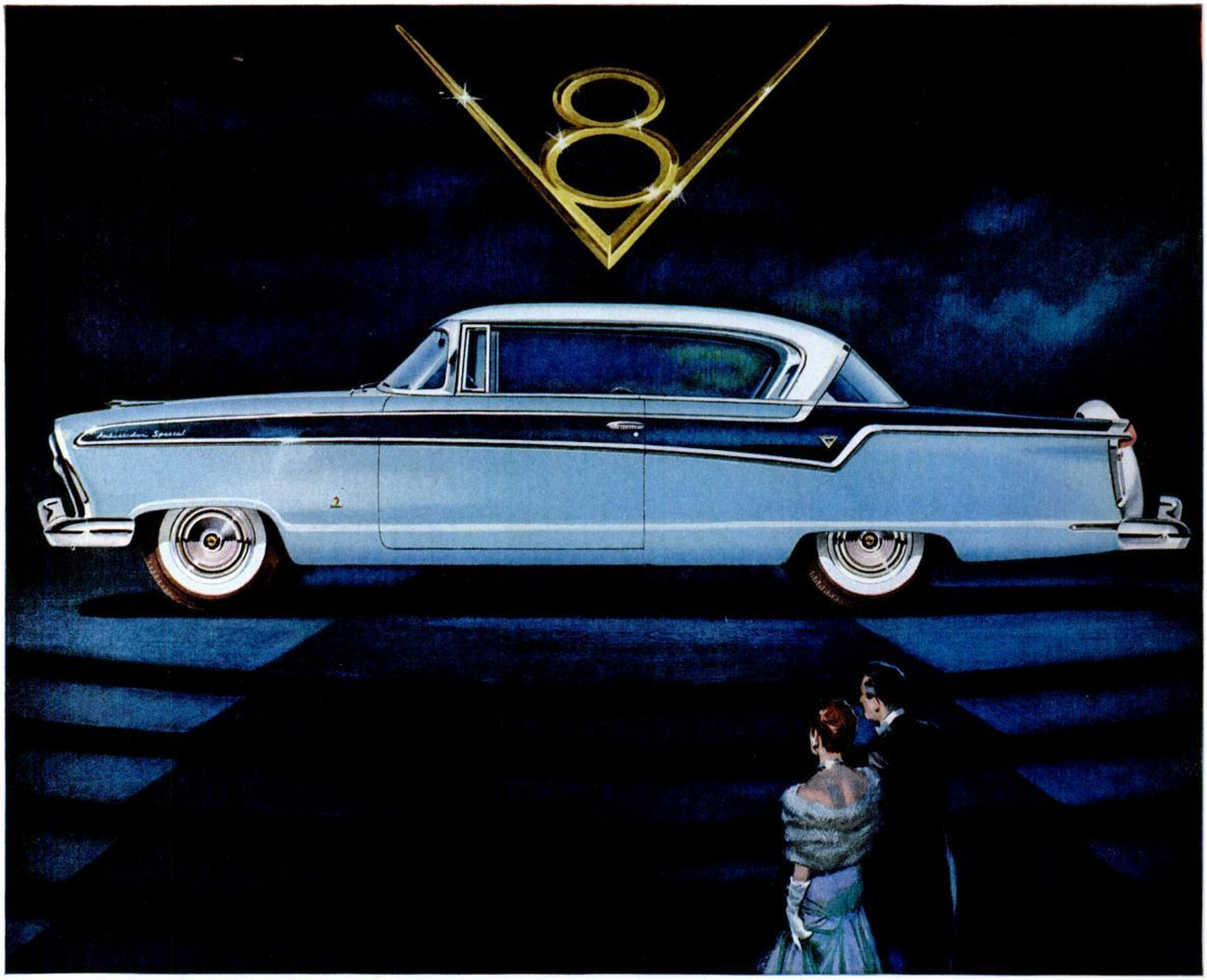
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A Superb Nash V-8 Engineering Achievement . . . The Brand-New **Ambassador Special** . . . Brings You the Smoothest, Thriftiest, Most Trigger-Quick V-8 Performance in America . . . Plus the Biggest Room on the Road . . . All At An Amazing Low Price!



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NEVER BEFORE a V-8 like this! This new V-8, engineered and built by Nash, is so quick on the trigger it leaves all others behind at the traffic light. Yet so silken smooth, you hear but a whisper at any speed. Only the Nash Ambassador Special—of all V-8's—can bring you all this—

- **Record-breaking V-8 economy that measured 20.7 miles per gallon in the 1956 Mobilgas Economy Run.**
- **The most interior room on the road. Even Airliner Reclining Seats and Twin Travel Beds.**
- **New Flashaway Hydra-Matic for whiplash response.**
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Drive a Nash Ambassador Special today. You'll never want to go back to ordinary cars again.

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THE GROWING AIR AMERICA

The far-ranging revolution brought on by the air age gives birth to a new, noisy and burgeoning economy

by CHARLES J. V. MURPHY

THERE is scarcely a day that one or another of the raw, new suburbs of Los Angeles is not momentarily stiffened into suspense by the whiplash crack-crack of an invisible airplane breaking the sound barrier 35,000 feet above it. West of Los Angeles near a rocky defile that Hollywood uses as a convenient location for westerns, the inhabitants of the little town of Chatsworth are braced for another kind of sound—the apocalyptic rumble and howl of the rocket engines which North American Aviation, Inc. is testing for the Intercontinental Ballistic Missile that will travel about 20 times the speed of sound and penetrate the airless space 500 miles above the earth.

At 1,100 U.S. airports the thunder seems to mount daily. Horns blare amid the grind and heave of the road-choking traffic daily being engorged and disgorged by the packed parking lots of the gigantic aircraft complexes. (The plant on this page is North American in Los Angeles.) Bulldozers roar and shudder as they break the prairie and the desert for still

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WOMEN PRODUCTION WORKERS, successors to the war's "Rosie the Riveter," work on complicated operations at Douglas' El Segundo, Calif. plant. Here they install 18 miles of wiring per assembly for twin-jet Skywarrior bomber. It is a tedious, exacting job, and women do it much better than men.

AIR REVOLUTION CONTINUED

more plants to build the missiles, the engines, the computers and all the other apparatus needed for man's thrust into space.

Whatever else the air age may be doing to us, it is certainly raising the decibel level of civilization. Those who have not seen it must have heard it. The air age, a technological revolution of incalculable scope, is gathering momentum throughout the country. An epochal change has at last arrived, and with it a whole new vision of the tasks open to men, of the changing nature of national power, and even of the imminence of man's first thrust into outer space.

Thirty years ago Henry Ford, the man who put a nation on wheels and who perhaps more than any other American shaped the economic geography of the U.S. during the first half of the 20th Century, theorized, "The airplane will soon be a part of our life. What it will mean, no one knows; we have not yet found out what the automobile means." In the moral and political sense that Ford had in mind, the ultimate meaning of the airplane and the myriad technologies being mobilized to improve it, counter it, and even supplant it, still eludes us. During the past decade the air vehicle has come to exemplify, as has no other invention before it, the paradox of science's dual capacity for destruction and progress. This much, however, is certain: the new technologies of the air are rapidly becoming the major technical effort of the American people. They may be already. They are changing the nature of American society faster than it has ever been changed before.



LOCKHEED'S GROSS

The extent to which this country is becoming an air community, as earlier it materialized as the world's first automobile community, is revealed in some tersely significant vital statistics.

The aircraft industry is now seriously pressing the automotive industry as the nation's foremost manufacturing employer of labor. Early this year the total labor force directly engaged in the production of aircraft was 777,400 workers, compared with nearly 991,600 in the automotive industry. And the latter figure is substantially reduced whenever, as at present, there are widespread lay-offs in the automobile plants.

Even more thought-provoking is the aircraft industry's deepening contribution to the national income. Exact measurements are impossible to make, but because of the aircraft industry's higher order of technical skills it is a good estimate that its payroll is greater than that of the automotive industry, despite the latter's bigger force. The aircraft industry, taken with the revenues of commercial airlines, should pour as much as $10.5 billion into the U.S. economy this year. In all U.S. manufacturing, only the automotive industry, with its sidelines of refrigerators, diesel locomotives, farm equipment and other mass goods, makes a bigger contribution to the economy.

Impressive as these dollar and employment statistics are, they scarcely begin to measure the pervasive nature and extent of the new American air community. They do not include the continuing investments of manpower and money made by the approximately 1.8 million men and women in the military services who direct, fly or otherwise support U.S. airpower; or the 121,000 people employed by U.S. airlines, both foreign and domestic; or the 7,200 technicians and engineers of the Civil Aeronautics Administration who man the air routes; or the tens of thousands who fly or service the 59,000 private airplanes that are used for personal and business purposes. And it does not include other thousands of civilian research workers who today are working on problems concerned with the air at such establishments as the Air Force Cambridge Research Center (4,500 workers on the payroll), the great laboratories of the National Advisory Committee for Aeronautics at Langley Field, Va., at Cleveland, Ohio, at Moffett Field, Calif. and other major research projects at M.I.T. and Cal Tech.

It is as if a mighty swell had returned to lift a becalmed sea which had apparently receded. Seldom has any great industry disintegrated with such apparent finality as did the U.S. aircraft industry immediately after World War II. In a matter of months employment fell 91% from the wartime peak. "The years 1946–49," says Robert E. Gross, board chairman of Lockheed Aircraft Corporation, "were the years when only the pencils were busy." But the technological surge resumed, more powerfully than ever, and today there is hardly an American village or town with a manufacturing tradition that is not being pulled up into the air age.

A $100 billion bookkeeping figure

FOR the purpose of establishing, at least within crude limits, some idea of the present U.S. physical investment in air power, LIFE asked the military services, the airlines, the manufacturers and the Civil Aeronautics Administration to estimate the current worth of their respective plants, including the airplanes, the airports and airfields, the research facilities, and so on. The total figure is in excess of $100 billion. This, however, is a bookkeeping figure, a conservative estimate of the current dollar worth of the physical assets of the vast enterprise.

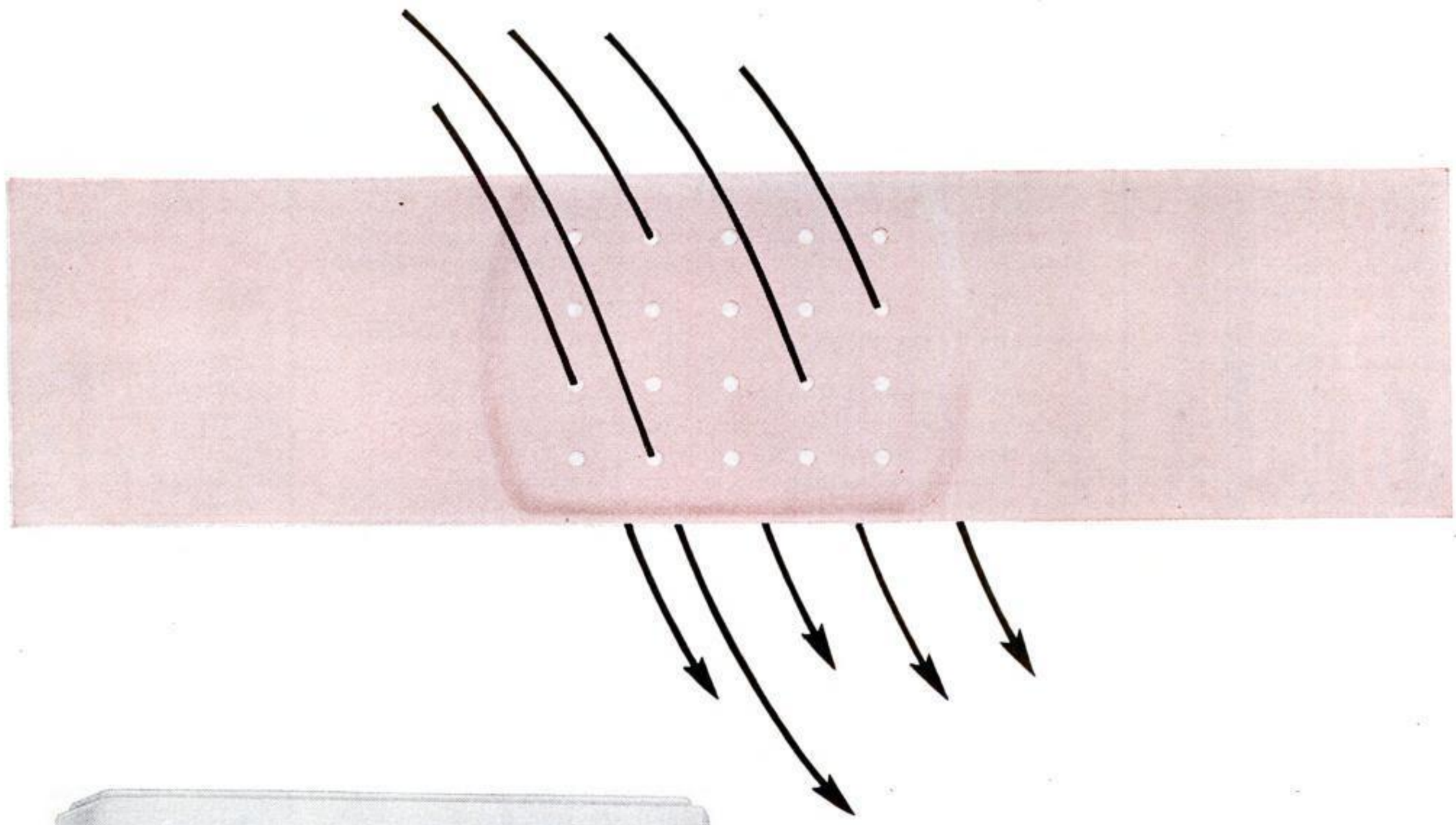
Today between 85 and 90% of what might be called the U.S. air business—that is, everything connected with the air—is directly affected by military interest. The Soviet threat must therefore be given a large share of credit for the flourishing condition of the air sector of the American economy. The Air Force alone in the fiscal year ending this month accounted for 46% of U.S. military spending. Add to these figures what the Army and Navy budgeted for their air services and the national outlay for military airpower equals one third of the entire cost of the federal establishment.

The explanation for these huge and continuing investments is obvious. During the Eisenhower administration U.S. strategy, in its military aspects, has come to rest essentially upon air-atomic

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They stick better,
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STANBACK is not a one ingredient formula . . . STANBACK combines several medically proven pain relievers into one easy to take dose. . . . The added effectiveness of these MULTIPLE ingredients brings faster, more complete relief, easing anxiety and tension usually accompanying pain. . . .

Test STANBACK against any preparation you've ever used . . . see how much faster relief comes.





"THE TIN GOOSE" was the affectionate nickname for the pioneer air transport plane, the trimotor built by Ford in 1926. The last trimotors were made by Ford in 1932, but they were so durable that some are still in use.

AIR REVOLUTION CONTINUED

power. There are of course those who question the rightness of such a strategy, but it could well turn out that the recent tempest over this strategy within the Pentagon was the last gasp of protest.

If it has done nothing else, the combination of the airplane and nuclear weapons has provided the nation with a shield during a period of world ferment. Behind that shield the fantastic proliferation in American economic activity has in a decade raised the gross national product 80%. Without the shield this could never have occurred; the United States would have become an armed camp. That the U.S., in the midst of what President Eisenhower has described as an "age of peril," has been able to proceed about its wonted affairs with few hindrances is due in no small measure to the fact that the 200,000 officers and airmen of the Strategic Air Command have acted as a deterrent to the vast, remote power of Soviet Russia.

But the air age revolution goes on in this field too. In another decade, perhaps, the long-range missile may begin to supplant the bomber as we now know it. We cannot assume that the Air Force, as presently constituted, will necessarily retain its monopoly of strategic air weapons. The new technologies of the air are begetting weapons of such reach and power as to outmode the separate services and bring about practical unification at last. The high cost of these new technologies has already absorbed, in the air and military atomic fields alone, half of the nation's present research and development capacity.

The reason why the U.S. and Russia are today the great airpowers of the world is that these two nations alone possess the resources demanded by the new air technologies. Lacking such resources, Britain and France have fallen far down in the power scale; they are only incidentally air communities.

But even as the oceans of air become the new path for strategy and empire, they are becoming mighty pathways of commerce as well. This year the officers of the Douglas Aircraft Company made an encouraging discovery: 45.3% of their $2.4 billion backlog is for commercial airliners. This is not because of any significant decline in military demand. Instead it is the result of a wholly unexpected upsurge in orders for the new DC-8 jets, the first of which will go into service in 1959. Lockheed, builders of the Constellation and the Electra turboprop passenger airplanes, has a backlog that is 34% commercial. Meanwhile the plants continue to turn out piston-powered planes to handle the expanding traffic load during the wait for the turbine-powered fleet. Altogether the unfilled orders for airliners equal 14.5 times the industry's entire 1949 commercial airliner sales.

The growth of air travel has startled even the sturdiest optimists of that business. For moving around the country beyond easy commuting distances more Americans may go by plane than train in 1956. Last year American Airlines President C. R. Smith

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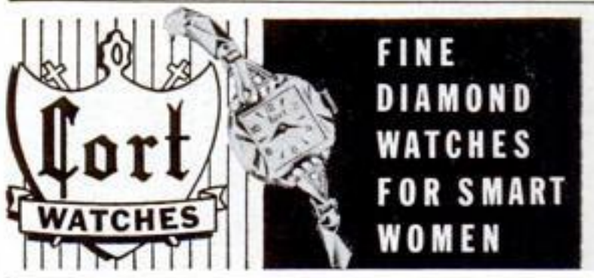
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World's Largest Selling Medicated Family Powder



Soothe SUNBURN with Mexsana Skin Cream. It speeds healing, softens skin. Make-up base, handcream, too.





the sparkle that lies in your eyes!

Why tolerate dull-looking, reddish-streaked, tired-feeling eyes another instant? A few drops of EYE-GENE, recommended by eye specialists for over 20 years, will cleanse, soothe and refresh your eyes in seconds.

Safe, sure EYE-GENE® with Lexatol is a combination eye bath and lotion—crystal-clear and stainless. Celebrities use EYE-GENE daily. Why don't you? In handy dropper bottles—60c and $1 at all drug counters. Also available in Canada.



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Guaranteed by Good Housekeeping

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Which Wife is Yours?



Exhausted, wilting . . . breathing hot, humid dust- and pollen-laden air. Can't seem to get anything done—feels listless and bored. Obviously there's no air conditioning in this kitchen.



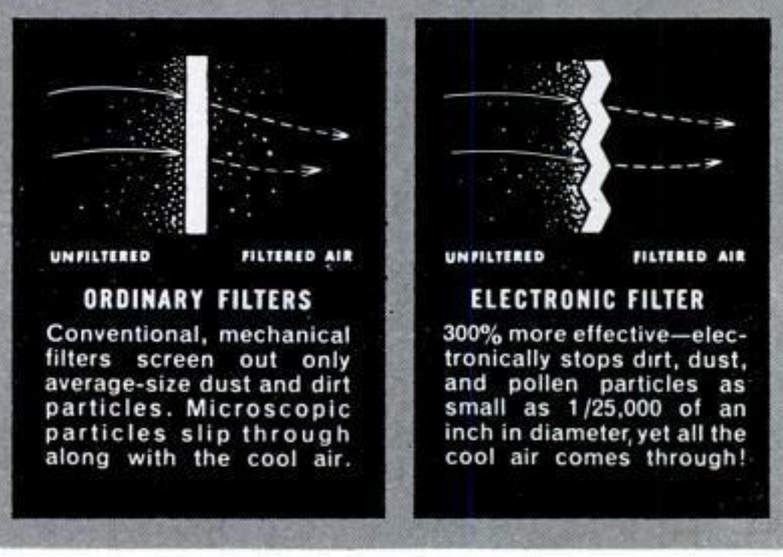
Peppy, enjoying her day . . . delightfully cool and breathing the cleanest, purest, freshest air possible, because her kitchen is air conditioned with a new Electronically-Advanced RCA WHIRLPOOL.

Stop tiring, irritating Summer heat—with a new RCA WHIRLPOOL Electronic Filter Air Conditioner!

There's magic in the air for homemakers! New 1956 RCA WHIRLPOOL Electronic Filter Air Conditioners purify the air electronically—bring a new way of life right into your kitchen. You'll enjoy cool, refreshing air that's draft-free and dehumidified all Summer long. Enjoy "conditioned" air that's gently warmed for ideal ventilation in cold weather. And the ELECTRONIC FILTER means the cleanest, purest air ever *all year long!*

New compact RCA WHIRLPOOL Electronic Filter Air Conditioners fit modern kitchen decor. They make house cleaning far easier because everything stays cleaner, longer. They also provide new relief for hay fever sufferers. For truly modern, carefree homemaking, see the new RCA WHIRLPOOL Electronic Filter Air Conditioners at your dealer's now.

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- New Electronic Filter
- Automatic Thermostat for constant temperature control at your comfort level
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NEW TOWNS have sprung up all over the country to house workers in new air industry plants. This one, Clairemont, was nothing but barren mesa six years ago (*above*). Now (*right*) it has 8,000 homes, 30,000 people, the majority brought in by Convair and allied factories around nearby San Diego, Calif.

AIR REVOLUTION CONTINUED

had the sense of passing a milestone when the annual operating revenues of his company, the biggest of the domestic lines, for the first time exceeded those of the Greyhound Bus Corporation.

Just as the automobile did under Ford's genius, the airplane is shaping anew the habits and opportunities of American society. The low-cost automobile pierced the age-old barrier between city and countryside and brought vast social changes that made for a more homogeneous and versatile nation. At the same time the revolutionary factory techniques devised by Ford for the mass production of the vehicle opened up a mass market and helped establish American industrial power—itself one of the decisive political developments of the 20th Century.

But if the first half of the 20th Century belonged to Ford, the second will be Wilbur and Orville Wright's. Long the most mobile society on earth, we are preparing to measure the American stride in Mach numbers. During an average day the domestic trunklines alone fly 109,600 passengers an average of 550 miles each. Miami, for example, imports and exports by air the equivalent of its entire population every two months, during the tourist season.

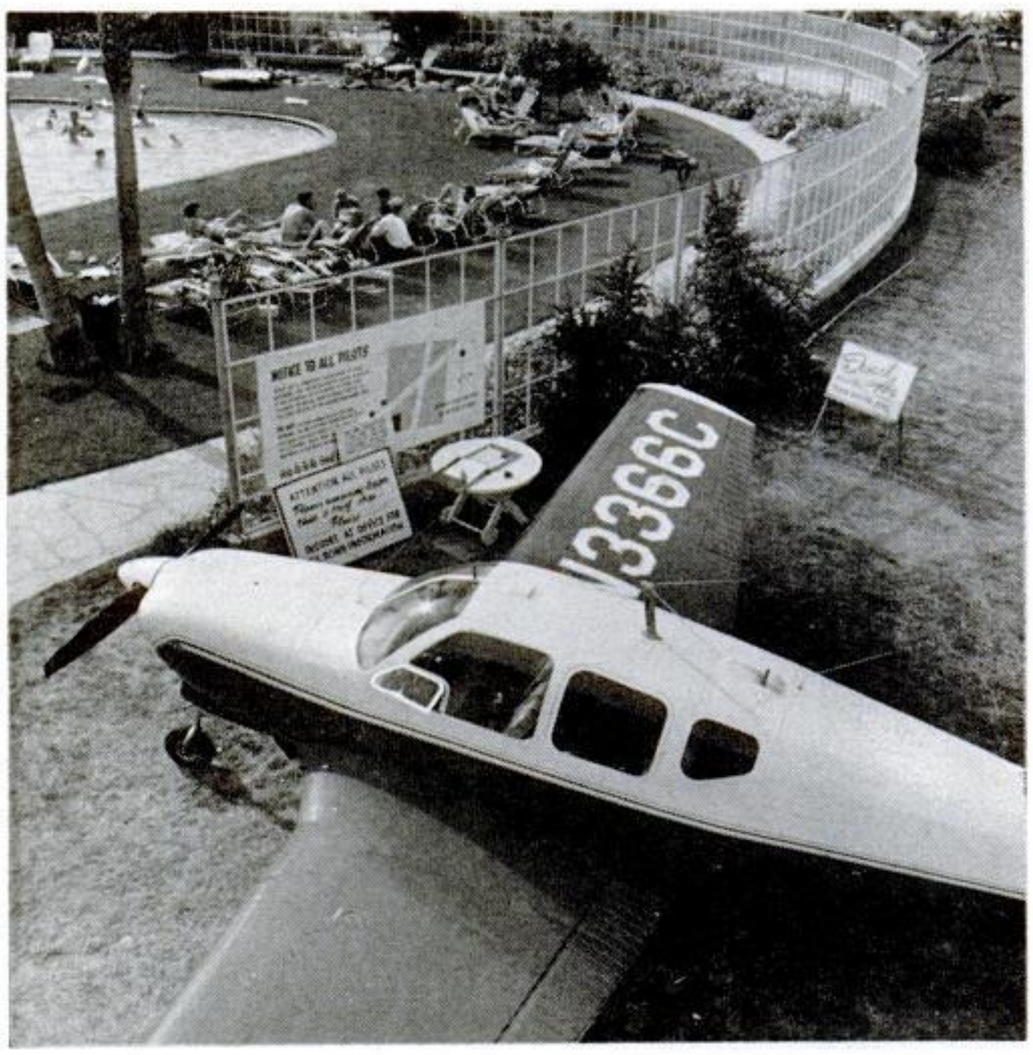
So the vast sociological mixing-up process begun by the automobile is being accelerated by the airplane. The airplane has begun to make the nation one interconnected whole. The last vestiges of regionalism are rapidly being wiped out. Once the jets are in service the country's farthest cities will be less than five hours apart, a fact of great importance for U.S. businesses.

As the airplane industry grows, the supporting industries mushroom everywhere around it, providing new kinds of industries, new jobs and new markets. Even atomics and electronics, the magic passwords of the changing American economy, are inseparable from airpower. Though they will give rise to distinct and unique economic activities of their own, they are part of the new apparatus whose development was forced by the air age. In the Los Angeles area, during the past nine years, for example, an average of one electronics company a week has set up shop. Most of the companies are concerned with one aspect or another of the air situation.

The 200,000 aircraft workers grouped around the great Douglas, Lockheed, North American, Hughes and Northrop plants make up 27% of Greater Los Angeles' manufacturing force; the industry's weekly payroll of more than $22 million is by far the biggest single tributary feeding into that community's income stream. The listings of aircraft companies, suppliers and vendors, air travel offices, airlines and the like fill 20 pages in the classified directory. The pressure for space is almost explosive. To make room for longer runways the Los Angeles airport has had to buy back land it sold for a housing development only a few years ago, and has had to raze the houses just as they were acquiring the look of having been lived in.

There are now an estimated 300 different housing developments going up in Los Angeles and Orange counties. Farther out at Canoga Park in the Santa Susana Mountains, a single development of 5,000 homes is going up, primarily for the employes of North American Aviation's Rocketdyne engine plant nearby. Fifty-five miles to the northeast is Palmdale, where North American, Convair, Lockheed and Northrop jointly operate a 5,000-acre tract for putting their airplanes through a final test before turning them

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NEW WAYS OF LIFE are provided by family plane. Fly-in motels like Desert Air (*left*) near Palm Springs, Calif. provide landing strips and swimming pools for guests. Rancher Robert Merrihews of Grant County, Neb. (*above*) even shops by plane because nearest big town, Alliance, is 42 miles away.

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"TAKE IT FROM OLD ERN" *Tennessee Ernie Ford himself*

"THIS IS THE ONE INSTANT THAT MAKES DOWNRIGHT DEE-LICIOUS COFFEE"

Ladies, it's here! The instant coffee your husbands will *really* go for—remarkable New Instant Chase & Sanborn. Serve him a cup. Then watch him ask for "seconds." That's the kind of full-bodied flavor this instant coffee has.

Want proof? In recent coffee taste tests, where housewives had no knowledge of brand or type of coffee served, they chose full-bodied Instant Chase & Sanborn *Best for Flavor by 2 to 1*—against leading instant coffees! Against ground coffees!

* * *

Take a tip from that famous TV star—Tennessee Ernie himself—"for downright dee-licious coffee, look for the jar with 'full-bodied' on the lid."

Watch the Tennessee Ernie Ford Show on Daytime TV · Monday through Friday · See your local paper for time

Chase & Sanborn *the full-bodied* **INSTANT**

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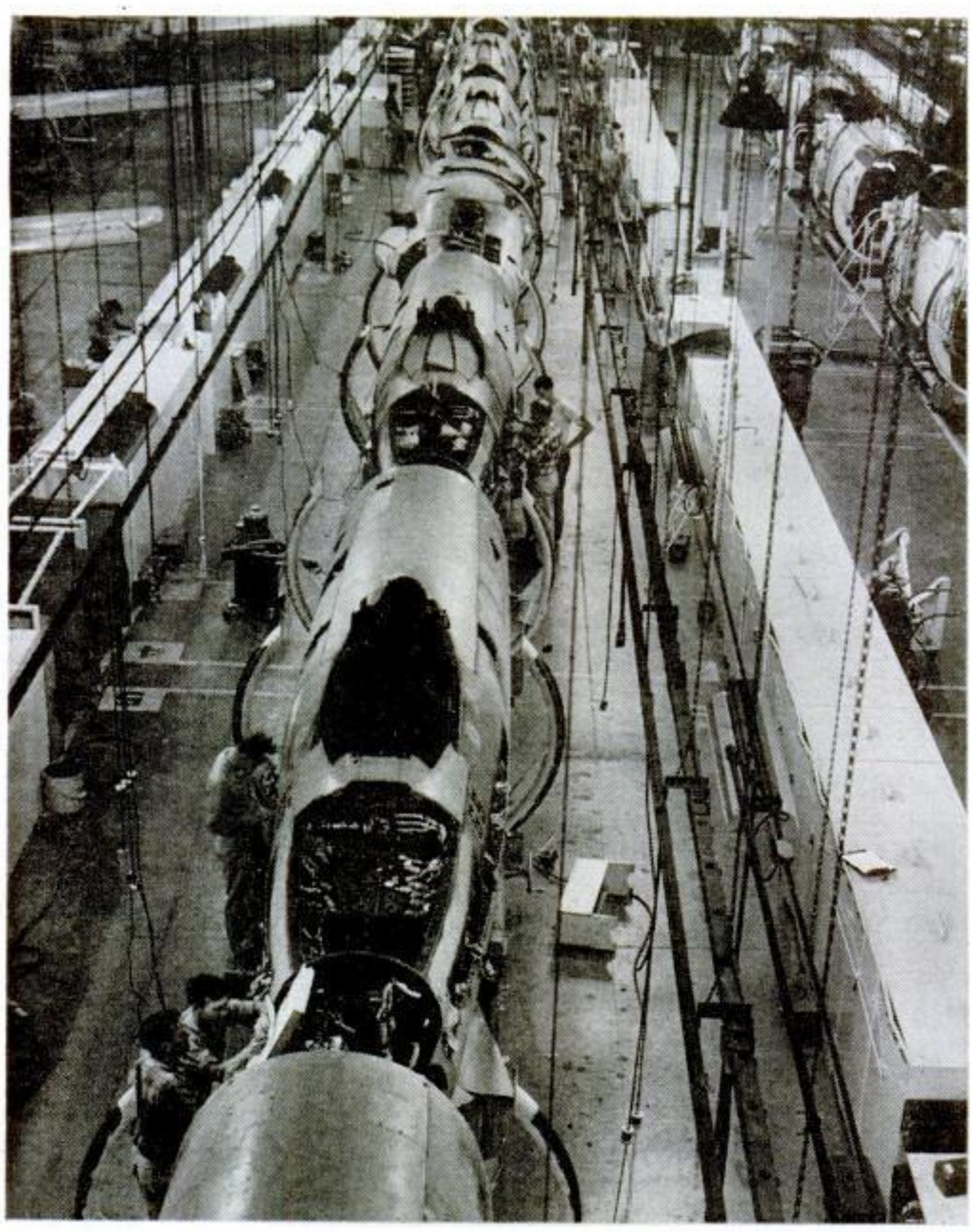


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ASSEMBLY LINE like auto industry's now makes planes. Here F-86s, workhorse jet fighters, move along line at North American in Los Angeles.

AIR REVOLUTION CONTINUED

over to the Air Force. Six years ago Palmdale's population was less than 2,800; now it is 11,000.

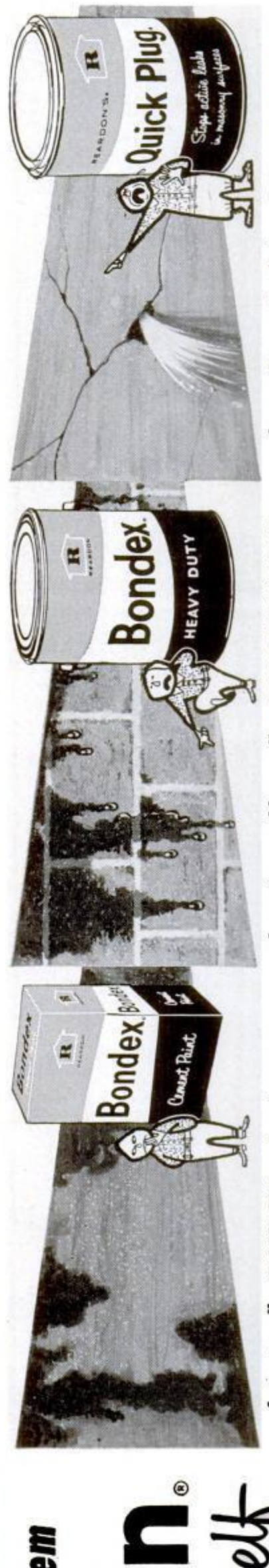
Much the same kind of growth is taking place in and around San Diego, home of Convair, and the Ryan, Solar and Rohr aircraft companies. San Diego, with a population just under a million, is the fastest growing big city in the nation, having gained more than 47% during the past six years; by far the largest factor in this incredible expansion was the growth of the aircraft companies. Convair alone is still taking on new people at the rate of more than 400 a week. San Diego is preparing to break ground for another Convair installation, a new $41 million plant, for the assembly of the Atlas Intercontinental Ballistic Missile. That will give work to 6,600 people.

On the strength of workers employed and business transacted, Los Angeles is indisputably the leading metropolis of the new air age. But not even Los Angeles bears so vivid an impress of the revolution as does Seattle, in the far northwest. Forty years ago when William E. Boeing, son of a wealthy timberman, founded a small airplane company on the shore of Lake Union, the city drew its living almost entirely from shipping and from timber. During the years between, Boeing's company has turned out about 25,000 airplanes in more than 200 different models. And that mighty source of wealth has reduced all other Seattle activities to relative insignificance.

Boeing's local labor force of 40,500 now includes one sixth of all Seattle's breadwinners. In addition, the company is sluicing $6 million a month among the scores of little machine shops and electronics suppliers that are its local subcontractors, plus a further $31.5 million that will be spent on the new construction that Boeing's continuing expansion requires. The extraordinary degree to which the city's growth, its hopes and its fears are tied to Boeing's prospects may be judged from the fact that during the past decade, when the company was adding 30,000 workers to its payroll, all of Seattle's other manufacturing activities (construction of logging trucks and equipment, freight cars, ships, etc.) were gaining less than 2,000.

Seattlites keep a close eye on this phenomenon. Filling station operators study the flow of Boeing traffic in order to determine the most strategic locations for new stations. A local TV station now stays on the air until 3 a.m. for the benefit of Boeing's swing shift. One April morning in 1952 this civic interest

CONTINUED



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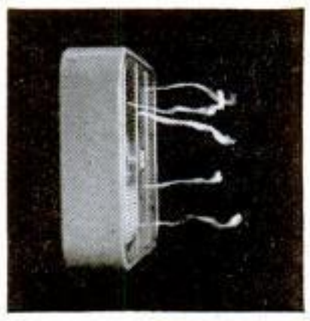
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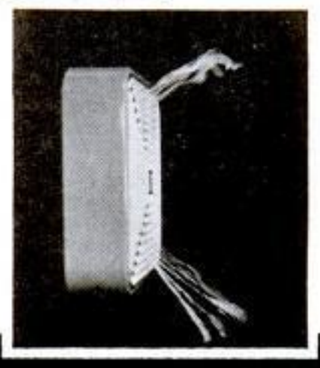
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AIR AGE FAMILY, the Burnhams of Marlborough, Conn., are all fliers. Father Richard, a Pratt & Whitney toolmaker, has pilot's license, 3,200 hours flying time. Mother has pilot's license, 300 hours. Henry (on couch) is a licensed commercial pilot with 1,000 hours. Donald (portrait) had 50 hours before he joined the Air Force in March 1954. Dog has 100 hours.

AIR REVOLUTION CONTINUED

gave rise to a remarkable scene. The prototype of the B-52 jet bomber was making its first flight and the event was supposed to be a closely held secret. But there were nearly 10,000 spectators assembled on the low hills overlooking the runway, watching eagerly while peanut vendors did a brisk business.

The success of the B-52, coming on top of the Air Force's earlier orders for the B-47 medium jet bomber, combined to put Boeing—and Seattle—in the blue chips of the jet age. National merchandising organizations like Marshall Field & Company and Allied Stores Corporation promptly expanded their Seattle operations. With huge orders for the B-52, the KC-135 jet tanker and the Bomarc air defense missile, not to mention the "707" jet airliner, Boeing now has the largest backlog of orders in the aircraft industry. Pleasantly anesthetized are the searing memories of the postwar contraction when Boeing was desperately designing egg beaters, bicycles and toilet seats to find work for its last 6,700 workers.

Across the continent, five hours by the coming jet transport, the staid Connecticut Valley is metamorphosing into an air age community. Here the same American inventiveness which produced the first U.S. plow, the first submarine and the Colt "equalizer" is being applied to aeronautics.

It was three decades ago that the late Frederick B. Rentschler set up shop in a tobacco storeroom in Hartford, with $250,000 in borrowed capital, a handful of engineers and 25 workers, to build a radial air-cooled aircraft engine. Today the Pratt & Whitney works, a division of United Aircraft Corporation, now in East Hartford, is the largest single manufacturing enterprise in the valley. Its 35,000-worker payroll dwarfs such rivals as the Royal Typewriter Company and even the big insurance companies for which the Hartford area has been famous. East Hartford itself, with a population of 36,000, has literally become a Pratt & Whitney town. And so, for that matter, have the old farming communities of Stratford and Bridgeport, where Sikorsky Aircraft, another United Aircraft division, recently built a big plant for the manufacture of helicopters, and nearby Windsor Locks, where Hamilton Standard, the propeller subsidiary, also has a new factory.

These places, however, are only the more conspicuous landmarks of the rise of air industry in the valley. What originally drew Ohio-born Fred Rentschler to the region was its pool of the most highly skilled toolmakers and machinists in the U.S. Taking advantage of that supply, Pratt & Whitney has from its beginning followed a policy of farming out by subcontract at least half of the work for its engines. Nowadays the company deals with 3,400 subcontractors and suppliers in two thirds of the states of the union, and more than a fifth of the work is spread through the Connecticut valley and contiguous communities.

Because of this deliberate dispersion the valley has, for the most part, been spared the eruption of raw, all-of-a-piece developments, flung together on treeless deserts and on nameless, graceless hillsides, that mark some of the air suburbs of

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In most respects, the Laceys are a fairly average family.

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California. The little town of South Windsor, only five miles from Pratt & Whitney and from which come many of its best artisans, looks quite as it did 30 years ago. There have been some additions to the predominantly colonial farmhouses on Main Street, but not many. At Peter Bossen's grocery store, which is also the post office, Mr. Bossen continues to weigh out cookies by the pound from big boxes hanging from the wall and to slice cheese from 30-pound cartwheel slabs. Still, on nights when the wind is from the south and low clouds form a reflecting surface, the deep, throbbing groan of the turbojet and turboprop engines being tested in the Pratt & Whitney cells is a reminder that the winds of a new revolution are coursing through the valley.

These are what might be called the industrial seats of the air community—the regional capitals of the prime contractors. But the air technologies have also galvanized even cities and towns that heretofore have had little or no manufacturing industry. Five years ago the only important connections Denver had with air activities derived from its being the site of United Air Lines' main operating center and of the Lowry Air Force Base. Then, beginning about two years ago, several aircraft supply companies took up residence there, in search of an untapped supply of labor. Among the immigrants was the Stanley Aviation Corporation, fabricators of ejection seats. Stanley Aviation found the bracing mountain air so much to its taste that it soon shut down its Buffalo, N.Y. operation. The Sundstrand Machine Tool Company of Rockford, Ill. set up a shop to make converters for engines. Then, in January, came a tremendous windfall: the Glenn L. Martin Company of Baltimore, selected by the Air Force as a second-source producer for the Intercontinental Ballistic Missile program, decided to assemble the titan weapon in Denver.

Little problems and big hopes

TWELVE miles south of the city, on what was grazing land, Martin is now building a plant expected to cost upwards of $20 million. The company has already transplanted more than 200 key executives and their families from the east to manage the operation. When the plant is in full operation next year it will provide work for 3,500 Denverites, while bringing to the economy of the Rockies an additional 1,500 engineers, draftsmen and highly skilled toolmakers whose specialties do not now exist there in sufficient quantity.

Nor is that all. The Ramo-Wooldridge Corporation of Los Angeles, the young but already famous electronics firm that is providing the technical management for the Air Force's entire ballistic missile program, is building another plant in Denver that will employ 1,500 workers, mostly technicians. Their needs and Martin's will generate a heavy demand for precision parts. The Denver Chamber of Commerce is already cogitating, with mixed jubilation and concern, serious inquiries from some 30 additional firms, most of them aircraft suppliers, about possible sites for plants.

Denver's population is leaping at the rate of 2,600 a month. Mayor Will Nicholson has warned the beneficiaries of Denver's air-fostered prosperity that a municipal income tax may be necessary to finance the enormously increased services that the swelling population demands. But these flyspeck inconveniences are lost in Denver's soaring hopes of becoming the national missile capital, possibly the Los Angeles of space transportation.

Then there is Marietta, in Cobb County, Georgia, a region which until a generation ago drew its income almost entirely from agriculture. During World War II, Marietta enjoyed a whirlwind prosperity as an assembly center for B-29s. But its prosperity evaporated as quickly as it arose, not to be revived until Lockheed reopened the plant with the onset of the Korean war. Now Lockheed, with $225 million in orders for its C-130 turboprop transport, is making ready to concentrate the assembly of the new machine at Marietta. Its labor force, drawn largely from the tobacco and cotton farms of Cobb County, is 18,000—nearly equal to Marietta's entire population of only five years ago.

Wichita, Kan. is an example of an American community to which the air age has brought the exhilaration of a second great boom. Wichita's first boom was in the early 1870s, when the town was the collection point for the longhorns that were driven up the Chisholm Trail from Texas. Then the railroads pushed westward to Dodge City, and Wichita's speculative prosperity died. For three generations its economy waxed and waned in response to the ups and downs of Kansas agriculture.

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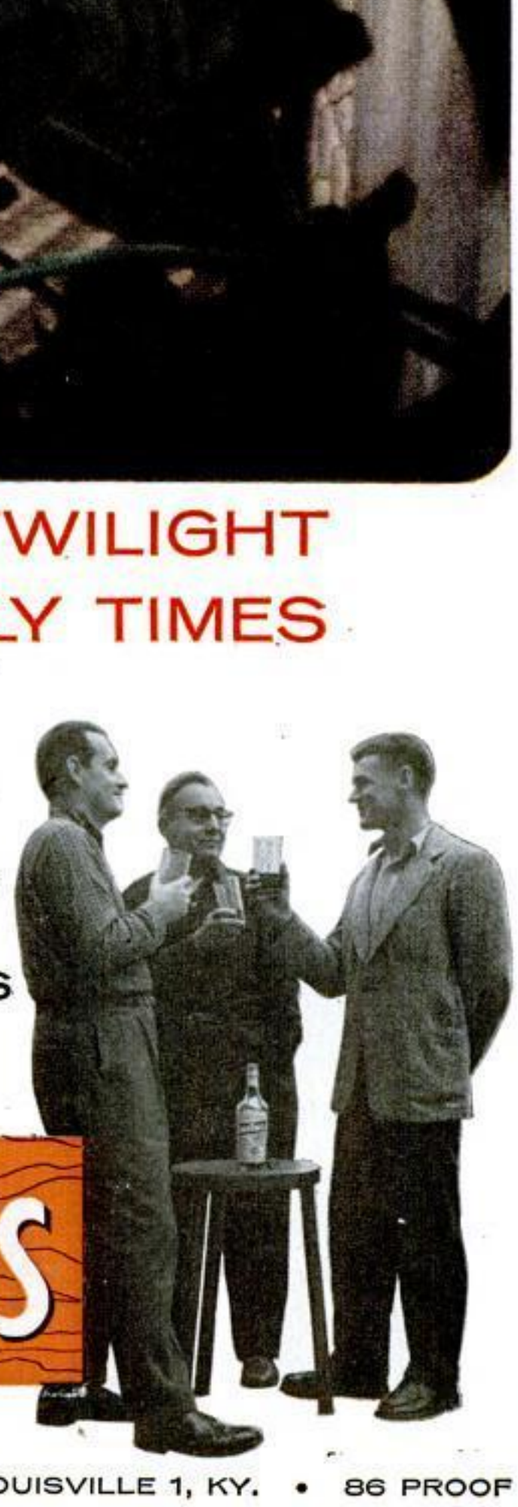
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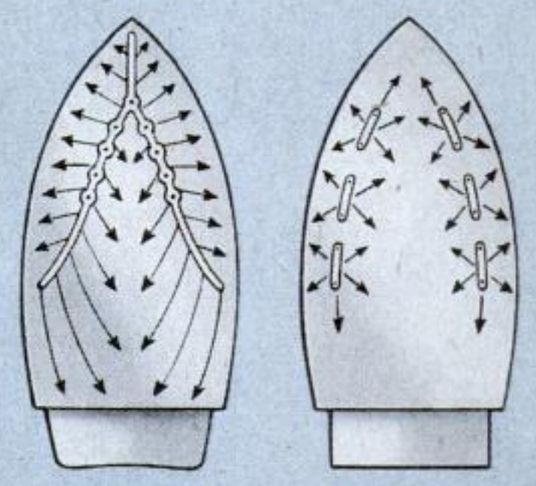
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AIR REVOLUTION CONTINUED

There have been airplane companies in Wichita ever since 1917, when Clyde Cessna assembled a light monoplane in a corner of a factory and flew it from a cow pasture. Indeed, quite a few years ago Wichita briefly held the distinction of manufacturing a quarter of all the commercial airplanes produced in this country. But all the companies so engaged were small and only two survive, Cessna and Beech, which are now the nation's principal producers of light aircraft. For Wichita the first real intimations of the air age came when the Boeing Airplane Company of Seattle suddenly moved in early in World War II to set up a huge B-29 factory, which at its peak employed 29,000 workers.

Like Marietta, Wichita experienced in the span of a decade the lush times and the hard times that until recently seemed to be the inescapable fate of aircraft communities. When Boeing all but shut down the Wichita operation in 1945, its employment fell to 1,400. The advent of the B-47 jet bomber brought prosperity back to Wichita. In 1948 Boeing started up again and proceeded at an ever-quickening tempo. As the plant gained momentum the local suppliers snapped back to life. During the past eight years the Wichita complex has built more than 1,200 B-47s and now the plant is making room for the bigger, costlier B-52s and for Boeing's Bomarc air defense missile, itself a very large program.

Today, Boeing's weekly payroll accounts for 52% of the city's wage-earners in manufacturing. Boeing, Cessna and Beech have become the principal markets for scores of local machine shops and parts vendors.

Wichita's jet-hoisted population has more than doubled during the past 15 years. The influx of farmers from the worn-out soil of eastern Oklahoma and Arkansas has had, among other consequences, the effect of imparting a predominantly Southern Baptist and therefore more hell-and-brimstone cast to the outlook of a community which for generations had been regulated by the staid precepts of the American Baptist. Nor is this the only new source of social friction. To satisfy a nearly trebled demand for water, the municipal authorities have had to push pipelines into the subterranean reservoirs of adjoining Harvey County. The farmers there are threatening to organize shotgun brigades to defend their wells.

A looming national crisis

THUS the air technologies are reshaping the economic and social geography of the U.S. These and other places too numerous to mention are emerging as the Pittsburghs, Detroits and Birminghams of the air age. But to a degree never known by the older industrial communities these new air age boom towns are dependent for their prosperity upon a continuous infusion of highly specialized technical talents. The immediate competitive pressure of Soviet air power is by no means the controlling reason for the increasing ferment in the American air community. The real catalyst is the realization that the world balance of military power will remain with us or swing against us according to whether we or the Russians are first in capitalizing on the mighty possibilities already charted by research. How big the national air research program is may be judged from the fact that the Air Force alone, through its Research and Development Command, has more than 1,800 contracts for research and development work with corporations, universities and independent research groups. The contracts total $1.8 billion.

This vast research program has given rise to a unique and by now nationally recognized emergency—the shortage of scientists and engineers. The pressure for talent starts building up on the factory floors of the aircraft plants themselves where today the ratio of shop workers to engineers and scientists averages 10 to 1, compared to an average of 14 to 1 ten years ago. And the pressure becomes more intense in the higher realms of research. For example, at M.I.T.'s Lincoln Laboratory, with a staff of 2,000 concentrating on certain electronic solutions to the air defense problem, the ratio of white collar workers and artisans to engineers and scientists is 2 to 1. Approximately the same ratio obtains among the Ramo-Wooldridge group working on the ICBM.

And we have only just crossed the threshold of the air age. It is an age which is essentially an era of science and technology—and thus the shortage of talent looms as a national crisis. For in less than a generation our technical margin could be wiped out by a failure to exploit the possibilities that have already risen into view. As President James R. Killian Jr. of M.I.T. pointed out

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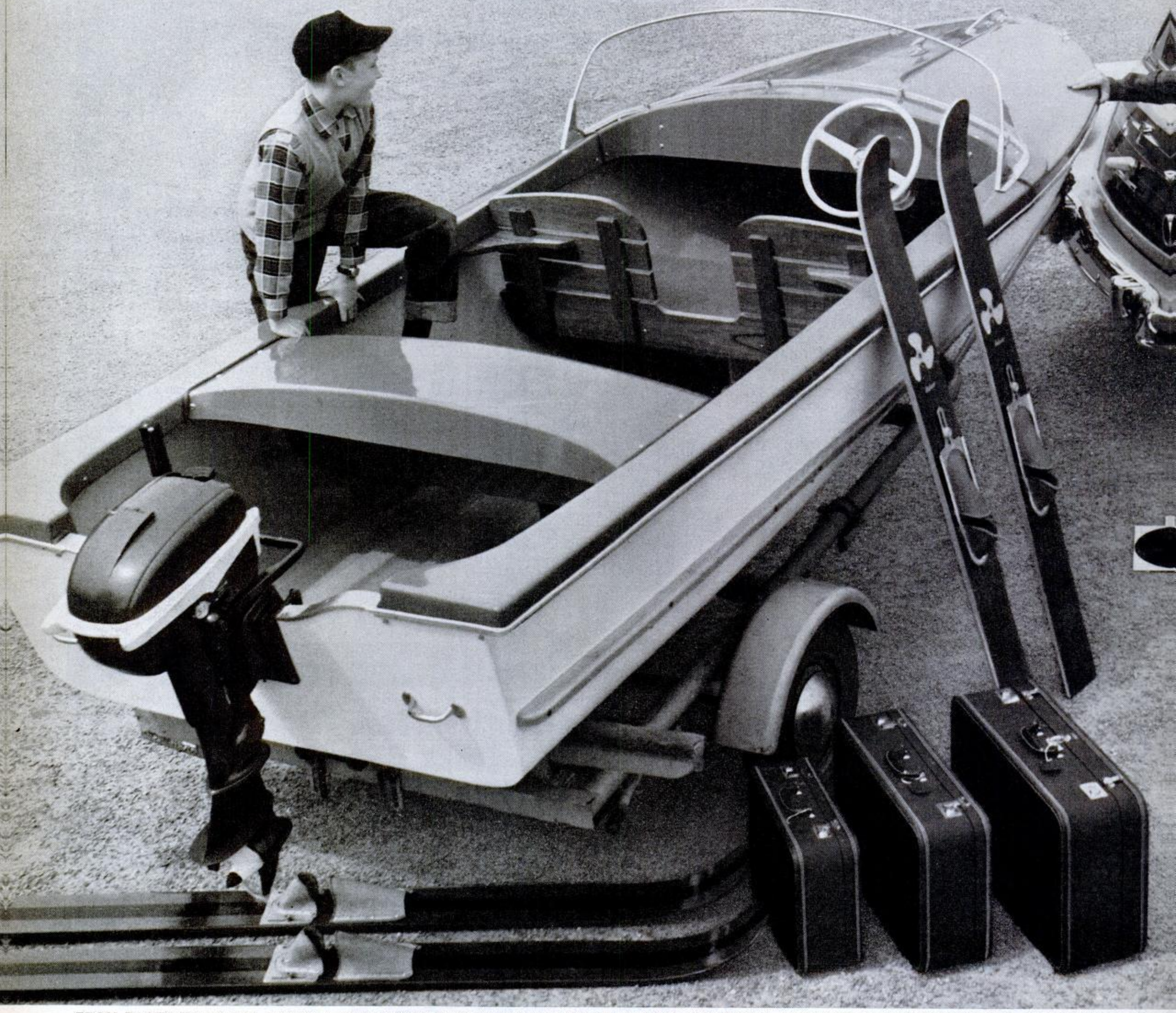
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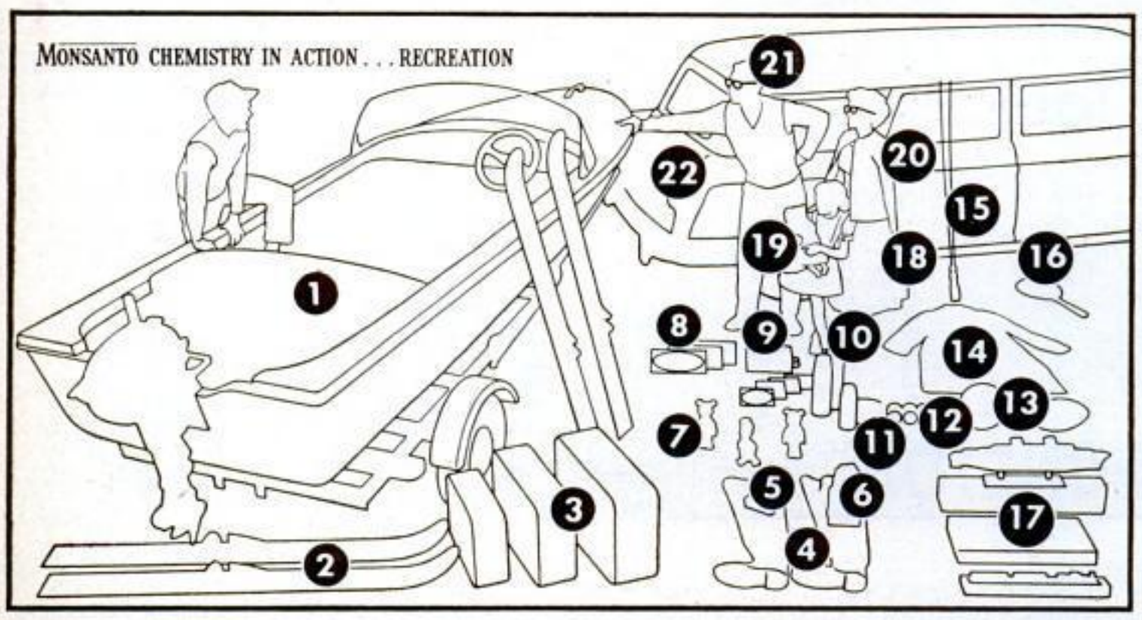
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way Plastic Picnic Cups molded in many colors. Hold 9 oz., cost only pennies . . . **(13)** *Vinyl Basketball* and football defy scuffs, cracks, rips, take years of abuse . . . **(14)** *Vinyl-Treated Raincoat* —warm and waterproof, inexpensive. A space-saver, too . . . **(15)** *Plastic and Glass Fishing Rod*—see photo at right . . . **(16)** *Tennis Racket* won't crack in the "throat." It's reinforced with a strong plastic brace . . . **(17)** *Realistic Hobby Kits* for all ages. Plastic parts are colorful, lifelike . . . **(18)** *Chemically treated Cottons*—shrink and wrinkle resistant, stay fresh thru many a wash. No ironing! . . . **(19)** *Washable Doll* in natural color. Made of tough, squeezable vinyl. . . . **(20)** *Warm, Fluffy Sweater* has chemical fibers. Easy to wash. Stays neat without blocking . . . **(21)** *Sturdy Sun Glasses* protected by plastic frames of *Nitron*. In many high-fashion colors and patterns . . . **(22)** *Gas and Oil*. Monsanto produces fuel and lubricants for cars and boats . . . petroleum additives which help insure trouble-free trips by fighting rust, boosting power.

Nitron: Reg. U. S. Pat. Off. Walt Disney characters, © Walt Disney Productions.



SEAWORTHY PLYWOOD serves the surf rider and yachtsman, alike. It's light, easy to maintain, won't warp, split or puncture. Wood-bonding Monsanto adhesives help make plywood strong enough even for 40-ft. molded hulls.



SWIM NEXT WEEK in your own pool! This one assembles in 8 hours . . . measures 15 by 30 ft. . . . is made of 4 glass fiber sections. It's strong, permanent, modestly priced. Needs no paint. Won't dent, crack or corrode.



ACTION FOR ANGLERS—you get it in a light, springy plastic and glass rod. There's less bend in the center, more at the tip. Strikes are easier to feel. Rods can't rot. Monsanto chemicals help add uniform strength, flexibility.

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WHERE CREATIVE CHEMISTRY WORKS WONDERS FOR YOU

MANUFACTURERS: If you are interested in any of the above materials— are considering ways to use them in your business— or want more information, write: Industrial Service Department, Monsanto Chemical Company, St. Louis 4, Missouri.

NEXT: MONSANTO CHEMISTRY IN EDUCATION

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in a recent article in LIFE (May 7: "A Bold Strategy to Beat Shortage"), the time is at hand when this country must begin to deploy its technical brainpower across those fields of research and weaponry that are essential to national survival, but it must at the same time nourish a new generation of scientists and engineers to carry on the basic research on which a modern technical society depends.

This problem extends beyond even the challenge of terrestrial air. Scientists are generally agreed that the technical means for a successful foray into outer space are already theoretically in hand. A few months ago Colonel William O. Davis, an Air Force scientist, chided science fiction writers for being "too conservative." He asserted that on the basis of existing knowledge a rocket voyage to Mars in less than 17 days is altogether possible; in his judgment it will be undertaken long before the 25- to 50-year period heretofore assumed. New metals of fantastic lightness and strength, new kinds of "sophisticated" fuels, rocket engines weighing less than the engine of Ford's famous Model T and generating millions of horsepower at top speed, electronic computers that can in weeks instead of years choose between intricate technical alternatives—these are the tools which science is readying for man's most gallant and splendid adventure.

There is no doubt about the will. The question seems to be resolving itself into one of acceptable costs. Scientists working on the Intercontinental Ballistic Missile project now believe that an outlay considerably less than the $5 to $10 billion eventually destined to go into that single weapons system would produce a successful vehicle for interplanetary travel. And the rising curiosity about what is technically feasible may, before long, be sharpened by a strategic and psychological need.

The Russians have clearly made immense strides with long-range rocketry and are peering speculatively into outer space. Last year it was announced in Moscow that an "Interplanetary Communications Commission" had been set up under the auspices of the Soviet Academy of Sciences and included among its members Dr. Peter Kapitza, perhaps Russia's most brilliant physicist. It is not straining credulity to visualize the start, within the next decade or two, of a race between the Russians and ourselves for the prestige of being first to another planet.

On the way, at least one definite practical advantage may be gained. An effective space platform, equipped with cameras and telemetering devices, would provide either the Russians or ourselves with a means for continuous surveillance of each other's industrial and air-missile deployments—crucial intelligence in a period when nations will have power to obliterate their enemies. And above this particular consideration there is, of course, the important one, in the long swing of history, of exploring beyond the present frontiers and extending our knowledge of the nature of life—the eternal business of civilization.

Thus the air age presents a succession of terraced vistas—first the expanding technological struggle for control and understanding of the earth's air; and, beyond, a far more complex struggle for the paths to the planets, for the very universe. The air age promises to be quite an era.



HEIRS OF THE AIR AGE study drift correction instrument at Olympus High School, Salt Lake City, where 150 students take aviation courses.

Tan Safely... beautifully!

... wonderful new Squibb product, *Sun 'n' Surf*. Comes as lotion, cream or handy spray, actually FILTERS OUT dangerous burning rays, helps you to a gorgeous golden tan. Non-greasy and will not stain.



Sun 'n' Surf*

The answer to the burning question!*

*TRADEMARK



SQUIBB quality . . . the priceless ingredient

"MY BEST FRIEND DID TELL ME!"

Mrs. C. H., Evanston, Illinois

"After all, if your best friend won't tell the truth—who will? And mine did! She told me in a nice way—but very frankly—that my gray hair was not as attractive as it should be. I was hurt, but I listened.

"She went on to explain that gray hair needs special care. She told me about Silver Curl . . . the home permanent that's *custom-made* for gray and white hair. And I bless the day she was so frank!

"Silver Curl gave me the softest, most *manageable* wave ever. And what a wonderful difference it's made. Today my gray hair is truly *attractive!*"

EASY TO DO! Even if you've never had a home permanent, you can have a Silver Curl with ease. Silver Curl is *self-neutralizing* . . . no extra steps. You just apply waving lotion—wind up curls—rinse and let dry. That's all!

GOOD NEWS! Silver Curl now has Fresh Air Waving Lotion . . . odor-free as a wave can be! And it gives a *longer-lasting* wave than any other home permanent!

®Silver Curl

TUMS® for ACID INDIGESTION-HEARTBURN 10¢ HANDY ROLL

QUICK RELIEF

Always carry Tums for top-speed relief of acid distress. No mixing, no waiting. Take Tums anywhere.

Steri-lite ROYAL LINE

AMERICA'S SMARTEST HOSTESS-WARE Available in Leading Stores Everywhere

• SALAD BOWLS • SALAD SETS
• BON BON DISHES • CANDLESTICKS
WITH NON-TARNISH SILVER-LIKE TRIMS



UNITED PLASTIC CORP., FITCHBURG, MASS.

Corns and Callouses Lift Right Out!

FAST - NERVE-DEEP RELIEF!



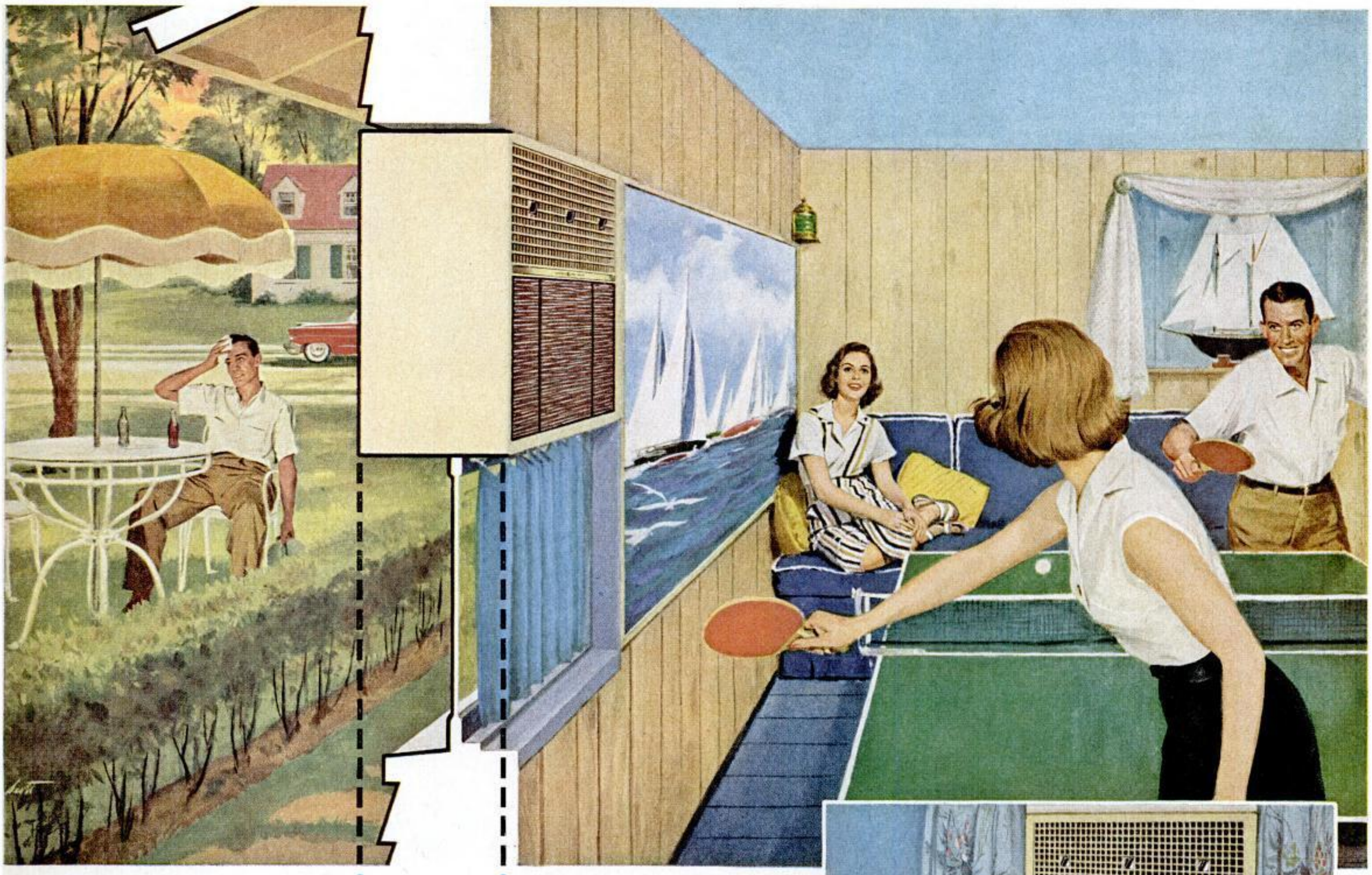
Never before anything like it

No waiting for relief when you use Dr. Scholl's Zino-pads. They stop pain at its *source* . . . ease new or tight shoes . . . stop corns, callouses *before* they can develop . . . remove corns, callouses one of the quickest ways known to medical science. New skin-matching color; worn invisibly. Try them! At Drug, Shoe, Dept., 5-10¢ Stores.

Dr Scholl's Zino-pads

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All new G-E Thinline Air Conditioner takes up ⅓ less space!



G-E Thinline is 16½ inches "thin"... no unsightly overhang!

Why swelter when you can switch from hot, humid misery to cool, cool comfort with a G-E Thinline Room Air Conditioner!

HERE is a completely new concept in room air conditioners that offers top performance, yet actually takes up one-third less space than previous corresponding models.

It fits flush with your inside wall, yet has no unsightly overhang outside. And not only does it offer you amazing cooling capacity and dehumidification—its High Power Factor Design *assures economy of operation!*

You have a choice of many different comfort-conditions just at the flick of a finger. Delightfully cooled, filtered air pours quietly into your room, makes your days and nights comfortable all summer long! See your G-E dealer today for a demonstration —he's listed in your classified phone book.

General Electric Company, Room Air Conditioner Department. Appliance Park, Louisville 1, Kentucky.

Most models available in Canada.



With a G-E Room Air Conditioner you choose your own weather with the flick of a finger. Knobs on top grille control 3 air directors, send cool, twice-filtered air to all parts of your room. Jet Air Freshener freshens your room in seconds.



Set it—and forget it! Accessory timer (slight additional cost) automatically turns unit on and off at any desired time for each of seven days. Ideal for offices and rooms used only part time.



Overcomes stale, unpleasant odors. Push a button; a jet of deodorizing spray mixes silently with the filtered air, freshens your whole room in seconds. Included in all models without cost.

Progress Is Our Most Important Product

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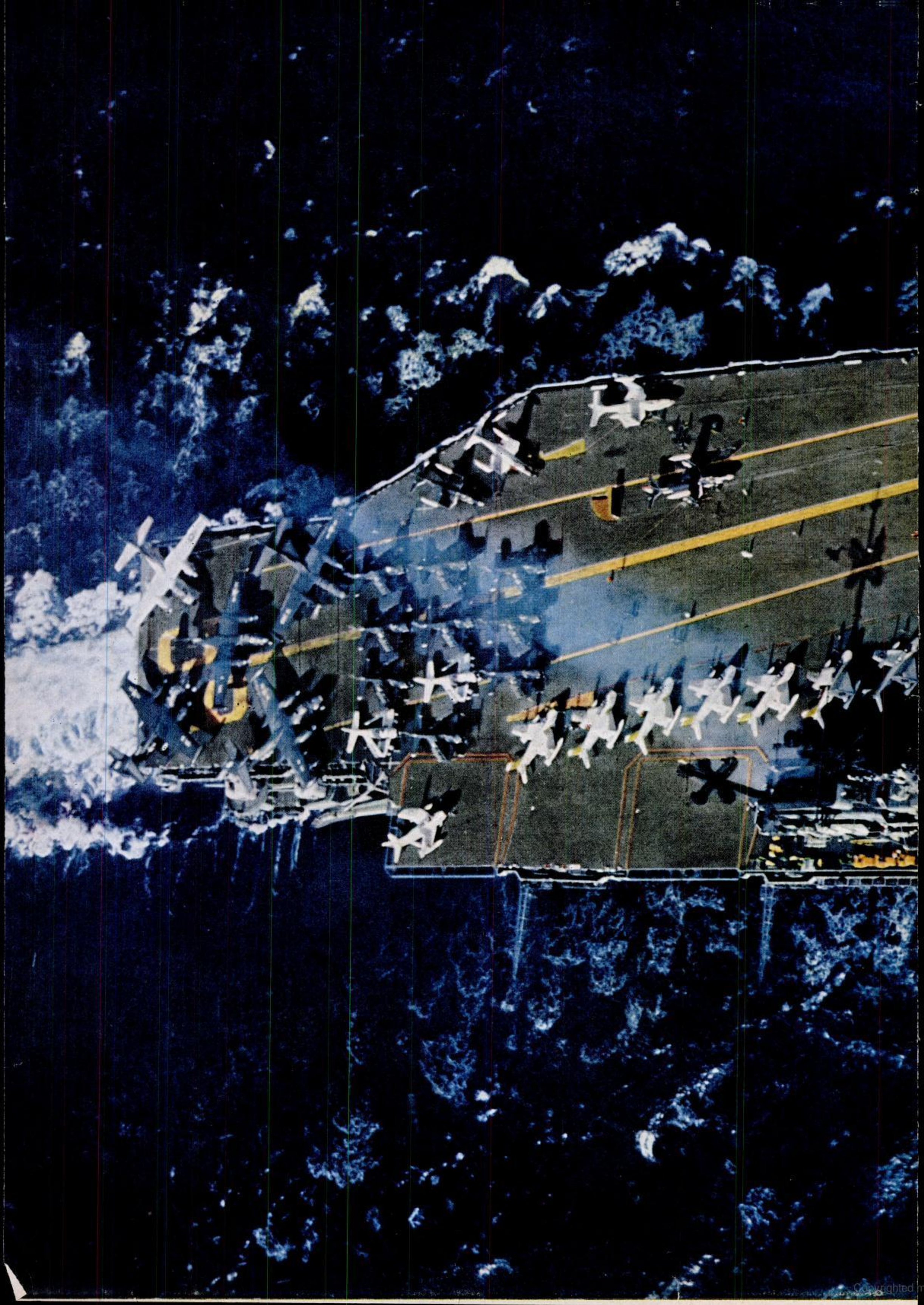
FIRST LINE PLANES IN REVIEW

Group portrait aloft shows the Air Force's best

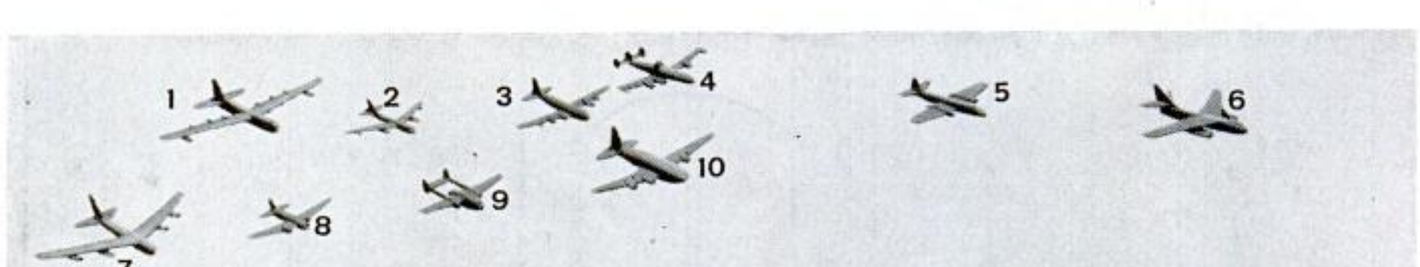
Here—flying for the first time ever in a single formation—are planes which make up an almost complete roster of the U.S. Air Force's operational types. These planes, shown over Florida's Gulf Coast, are identified in the drawing at right. Those flying in the lower half of the picture (see key at right for identification) are all jets. Some, with Air Force designations from F-80 through F-94, are older and slower models—which fly at less than sonic speed (about 760 mph at sea level). The newer

FOLD OUT—DO NOT TEAR →

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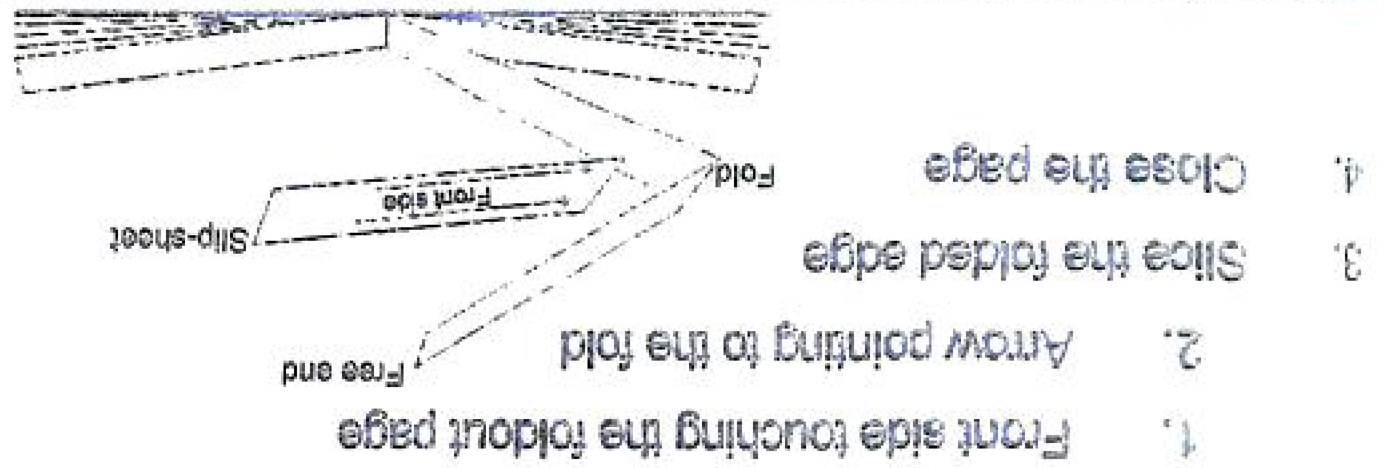


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IDENTIFICATION of planes shown above can be made by comparing picture with outline drawing at left; **1** B-36 heavy bomber; **2** B-47 medium bomber; **3** KC-97 tanker; **4** RC-121 radar, weather plane; **5** B-57 and **6** B-66 light bombers; **7** B-52 heavy bomber; **8** C-131, **9** C-119, **10** C-124 cargo and troop carriers; **11** F-86D all-weather interceptor; **12** F-84G fighter-bomber; **13** RF-84F photo-reconnaissance plane; **14** F-102A, **15** F-94C and **16** F-89H all-weather interceptors; **17** QF-80A target-towing plane; **18** T-33 jet two-seat trainer; **19** F-84F and **20** F-86H fighter-bombers; **21** F-100A fighter.

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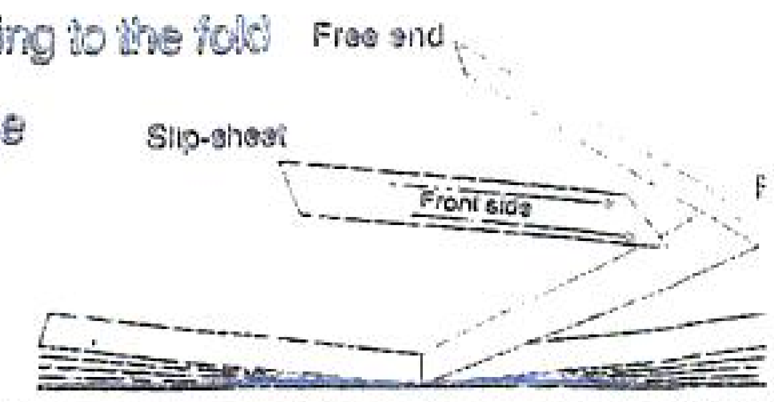
Foldout slip-sheet

1. Open the foldout page
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3. Slice the folded edge
4. Close the page

GbsSlipSheet-001

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1. Follow instructions on the other side

Back

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Back

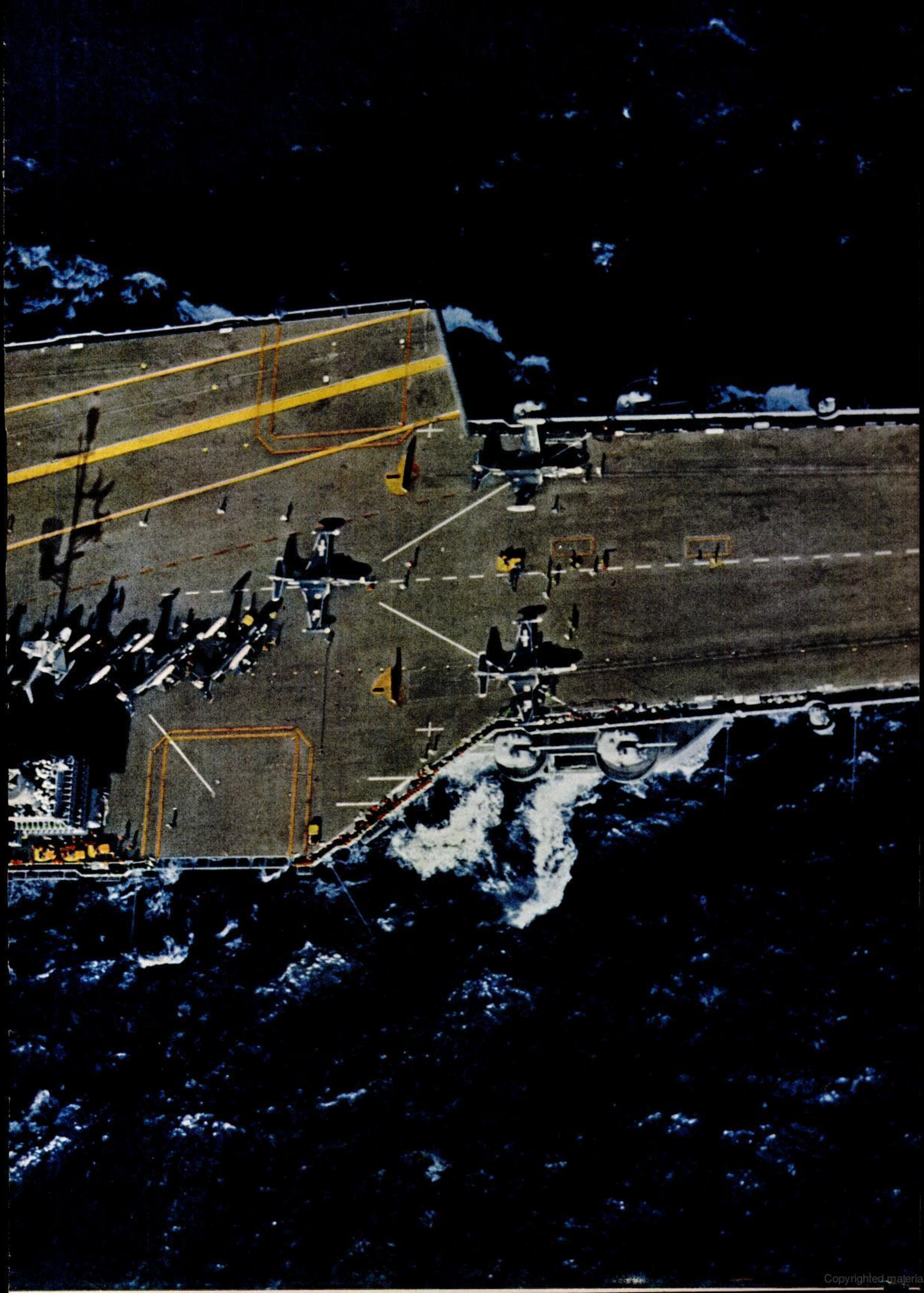
1. Follow instructions on the other side

Century Series, which begins with the F-100, are all supersonic (over 760 mph) and a few of them, including the delta-wing F-102 interceptor, can even climb at supersonic speed. Some of the slower jets, like the F-84, are used as fighter-bombers and also are armed with machine guns, rockets and bombs primarily for tactical use against battlefield targets. The interceptors, including the F-89 and F-94, are armed only with clusters of rockets.

The upper half contains bombers, most of which are powered by jets; support ships like the KC-97 tanker which refuels bombers in flight; and cargo planes like the C-119 and C-124 which carry equipment or men to distant bases and paratroopers in combat. (The C-119 is so slow—250 mph—that by the time it lumbered into place for this picture the F-102 had nearly gotten away.)

It is an axiom in the Air Force that every plane is either so new it is experimental or so old it is obsolescent. The huge B-36 bomber, for example, was perfected after World War II and has never dropped a bomb in combat. It probably never will. Only partly powered by jets (six of its 10 engines are propeller models), it is slowly being replaced by the B-52, which is fully jet-powered, flies 200 mph faster. But still faster models are on the drawing boards, and the Air Force's ultimate hope for bombers—still years away—is to replace them with a stratospheric missile which will get its bombs to the target with no crew at all.

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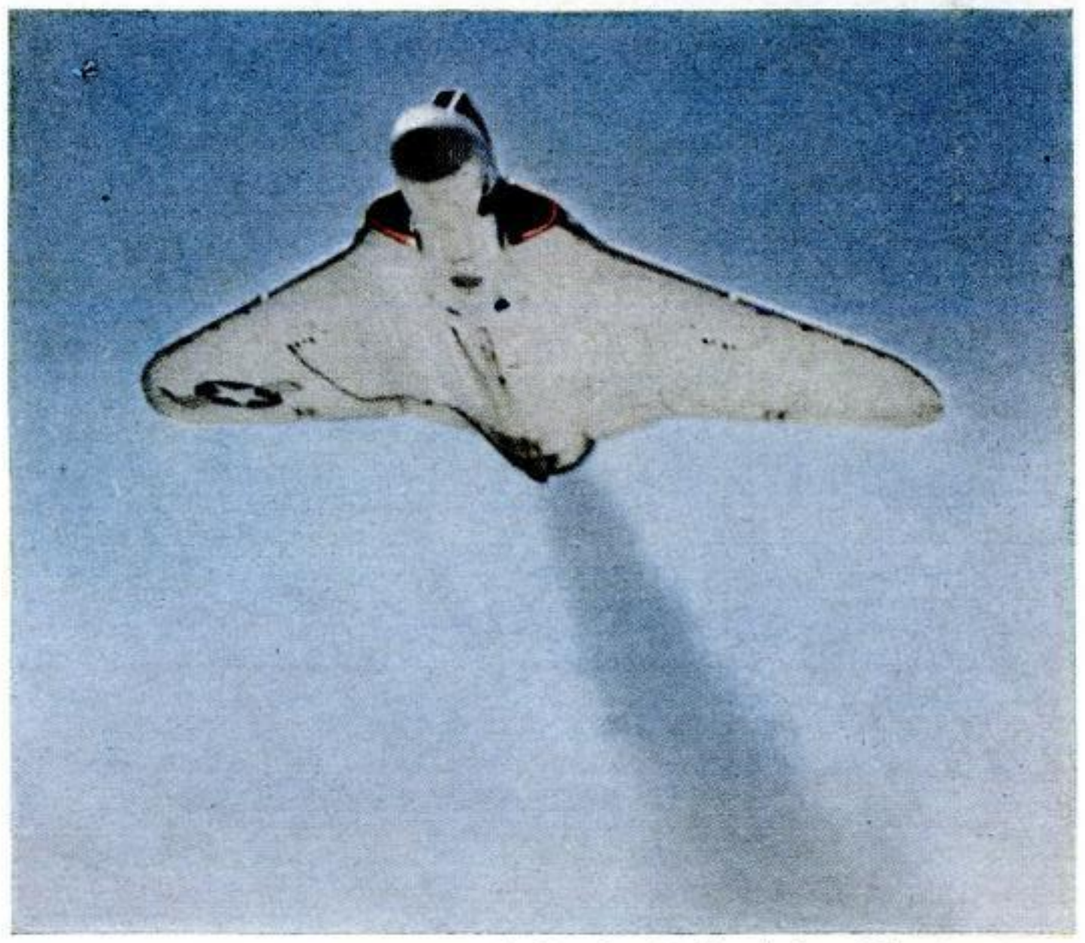
CHURNING AHEAD to give planes headwind for take-off, *Forrestal* prepares to launch two Banshees from forward catapults. Small white jet planes are Furies.

THE 'FORRESTAL' TAKES U.S. AIRPOWER TO SEA

The flat hulk above, known on Navy lists as CVA 59 and to the public as the U.S.S. *Forrestal* (named for the U.S. first Secretary of Defense), is the largest floating airfield now in operation. The *Forrestal*, shown here as she makes a run off Guantánamo Bay, Cuba, has a flight deck nearly four acres in area—1,039 feet long and 252 feet across. Four catapults, powered by steam from her boilers, are used to propel her 100 jet planes into the air. In addition to the take-off runway at her bow (*bottom of picture*) the carrier has an angled runway running diagonally across her deck, which allows her to recover planes while others are taking off. On previous carriers, which had only one runway, planes landing sometimes crashed accidentally into other aircraft on the crowded deck.

When Navy admirals argued in 1948–49 against U.S. expenditure for the B-36 on the grounds that some of the money could be better spent on carriers, Air Force generals countered that the bulky carrier was out of date. Though the generals won at the time—Secretary of Defense Louis Johnson halted work on supercarrier construction—the government in the end recognized a dual need and started to build the *Forrestal*. A heavy bomber fleet, capable of flying long distances with nuclear bombs, is strong insurance against enemy attack. And the carrier, whose planes can also deliver nuclear weapons, can be sent on short notice to many areas where the U.S. has no bases and thus add the classic elements of surprise and mobility to the battle.

In the Korean war carriers proved the value of these elements as they cruised off the coast, sending their planes to attack installations far behind the lines. But post-Korea jets are outgrowing the capacity of the older carriers to handle them efficiently. Heavier and faster, the new jets require more hangar deck space, larger landing areas and their high fuel consumption requires that carriers be bigger just to hold the needed fuel. The *Forrestal* provides an answer. Already commissioned but not yet in service is the U.S.S. *Saratoga*, a sister ship but almost seven feet longer. The Navy is so excited about these carriers that it hopes to build at least 10, some of which might run on nuclear power.



"FORRESTAL'S" NEW FIGHTER is Douglas F4-D. A fast delta-wing interceptor, it can fly from a standing start to a 10,000-foot altitude in 56 seconds.

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For fast, clean cooking the modern way— look what GAS offers you today!

Modern Gas built-ins like these dramatize what's new in Gas cooking . . . make you realize how much you're missing, if you're putting up with an outmoded range. Does your old range, for instance, give you exact time and temperature control . . . instant on-off heat and smokeless broiling, so your kitchen stays clean and cool? Today's Gas ranges do! Dinner cooks without watching in the new giant ovens. Just set the controls. Oven turns itself on, does the cooking with unvarying heat, turns itself off. Even a top burner now regulates its own heat at whatever temperature you dial. This "Burner with a Brain" makes any utensil automatic, ends burned food! See all the wonders of the truly modern Gas ranges now, during the Spring Showing of new models. AMERICAN GAS ASSOCIATION



BEST ROASTING OVEN THERE IS! Gas bakes and roasts more exactly, without variation, than any other kind of cooking. And now, you can enjoy a built-in Gas oven lined with chrome, for the fastest heating ever known! What a joy to clean, too!



PERFECTLY CONTROLLED BROILING! This built-in beauty lets you lift or lower the broiler with a finger touch—most effortless way ever to be sure of exact heat intensity for perfect broiling. Special Char-Krome radiants give meats real barbecue flavor!



EASIEST UPKEEP YET! What a pleasure . . . built-in top burners that pop right into the dishpan, wash as easily as a modern utensil! These burners come completely apart with no trouble at all . . . come clean in a jiffy . . . look newer, cook better, years longer!

New TAPPAN separate cooking units make your kitchen as personally perfect as a custom gown! Cabinets by KITCHEN MAID. See the Spring Showing of all the features of newest Gas ranges—on display now at your Gas company or Gas appliance dealer's.

ONLY GAS gives such matchless performance

The modern, economical fuel for automatic cooking . . . refrigeration . . .
water-heating . . . clothes-drying . . . house-heating . . . air-conditioning . . . incineration.

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GRADUATE ENGINEERS and SCIENTISTS
are needed immediately in these fields:
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TOP POSITIONS for Engineers in SOUTHERN CALIFORNIA

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Work in the development of ROCKET POWER

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If you have a Good head on Your shoulders . . .
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TESTING FIELDS

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IN BOEING PLANT ENGINEER BLUMENTHAL INSPECTS OUTSIDE WING TANK FITTINGS ON FIRST OF NEW KC-135 JET TANKERS

AVIATION'S INDISPENSABLE MAN

Boeing's Blumenthal exemplifies the sought-after engineers

Precariously perched above is an indispensable man of the air age, the engineer. So acute is the need for men of his talents and training that aircraft companies compete frantically against each other for their services, as shown in the advertisements at left.

This particular engineer, Vaughn Blumenthal, is one of Boeing Aircraft Company's staff of 7,000. Joining the company 15 years ago on graduating from the University of Washington, he began as an aerodynamics unit computer. He became flight test engineer for the B-17 Flying Fortress, later worked on the designs of the B-52. At 40, thoroughly steeped in his craft, he is now in charge of engineering on several of the company's new development projects.

Engineers like Blumenthal link the laboratory and assembly line. Both designers and practical production line experts, they employ slide-rule lore and shop know-how to translate the findings of theorists and proving ground testers (*p. 166*) into high performance aircraft. Rewards for their skills are considerable: jobs almost anywhere at salaries from $4,800 to start up to $35,000 maximum.

CONTINUED 161

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My vision is clearer and sharper. There's more comfort to playing on the brightest days with my

COOL-RAY Polaroid* SUN GLASSES

NOW — Priced as low as 79¢, $1.98, $2.98, $3.98

Sun glass illustrated has hand polished zyl frame #80 — $2.98 retail.

LOOK FOR THE COOL-RAY POLAROID DISPLAYS

*T. M. REG. BY POLAROID CORP.

SAXON

"America's Most Popular Trousers"

FOR THE FINEST STYLES and BEST VALUES IN MEN'S SLACKS SEE YOUR SAXON DEALER!
Write box 951-A, Scranton, Pa. for your FREE copy of "THE HOUR GLASS".

Lackawanna Pants Mfg. Co. SCRANTON, PA. NEW YORK AND ABERDEEN, MISS.

Italian Provincial

European Elegance . . . New World Craftsmanship

"The Continental Look" *in Metal Dining Furniture*

The charm and warmth of Italian Provincial, interpreted in tubular black metal with shimmering brass accents. Rich, natural wood grain pattern Douglite Plastic tops. DuPont Dacron cushioned chairs covered in fabulous Nylo-Saran washable fabric. European elegance . . . moderately priced!

Illustrated:
Set No. 4432/70
No. 365 Buffet

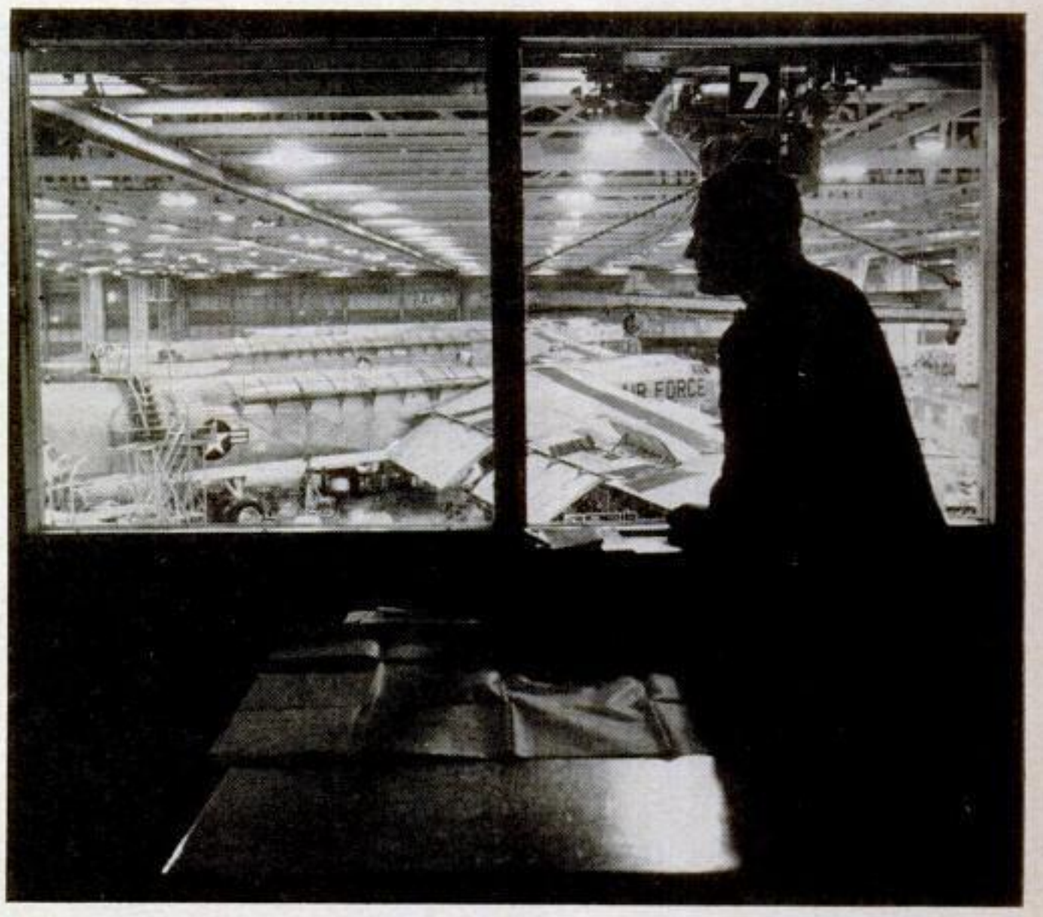
Guaranteed by Good Housekeeping

Douglas ORIGINALS

World's Largest Producer of Metal Dining Furniture

Douglas Originals at Furniture and Department Stores in Every Community. *See Them Today!*

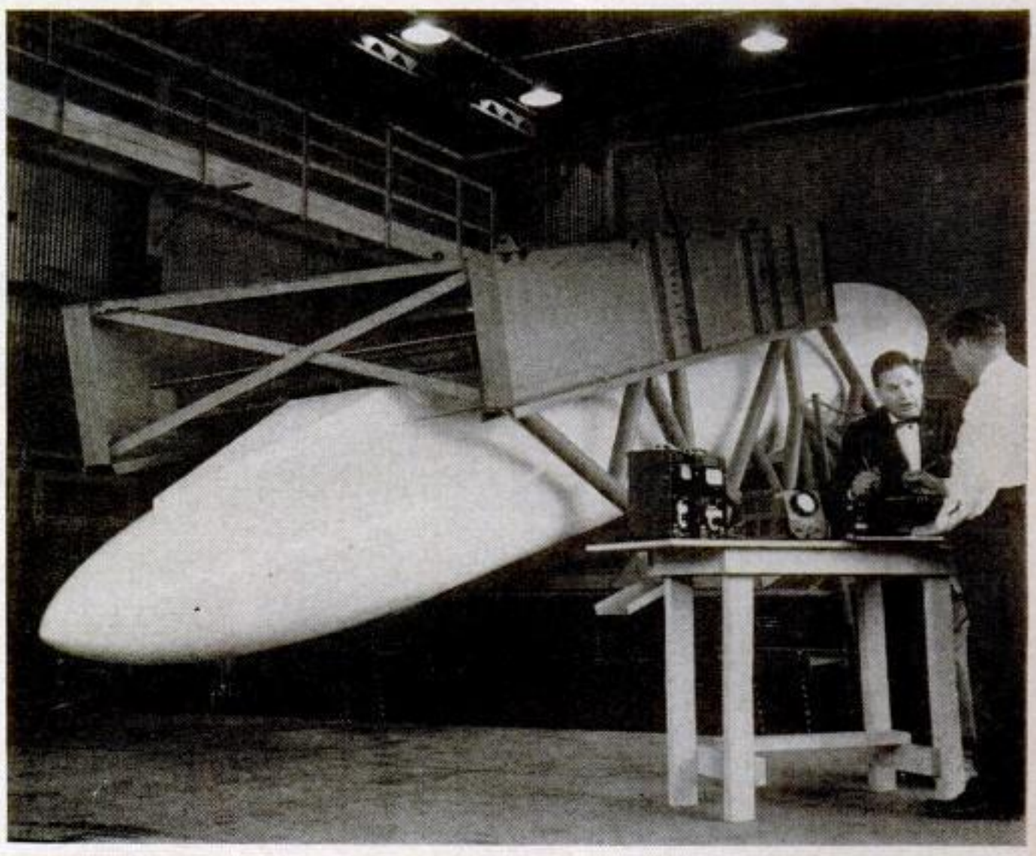
DOUGLAS FURNITURE CORPORATION Chicago 38, Illinois • Hawthorne 7, California



SURVEYING ASSEMBLY LINE, Blumenthal looks down from offices onto nearly complete B-52s. Constant improvement on them is his responsibility.



CHECKING AN IMPROVEMENT, Blumenthal inspects guide-light system on 707 tanker. Lights signal refueling plane to move up, down, forward, aft.

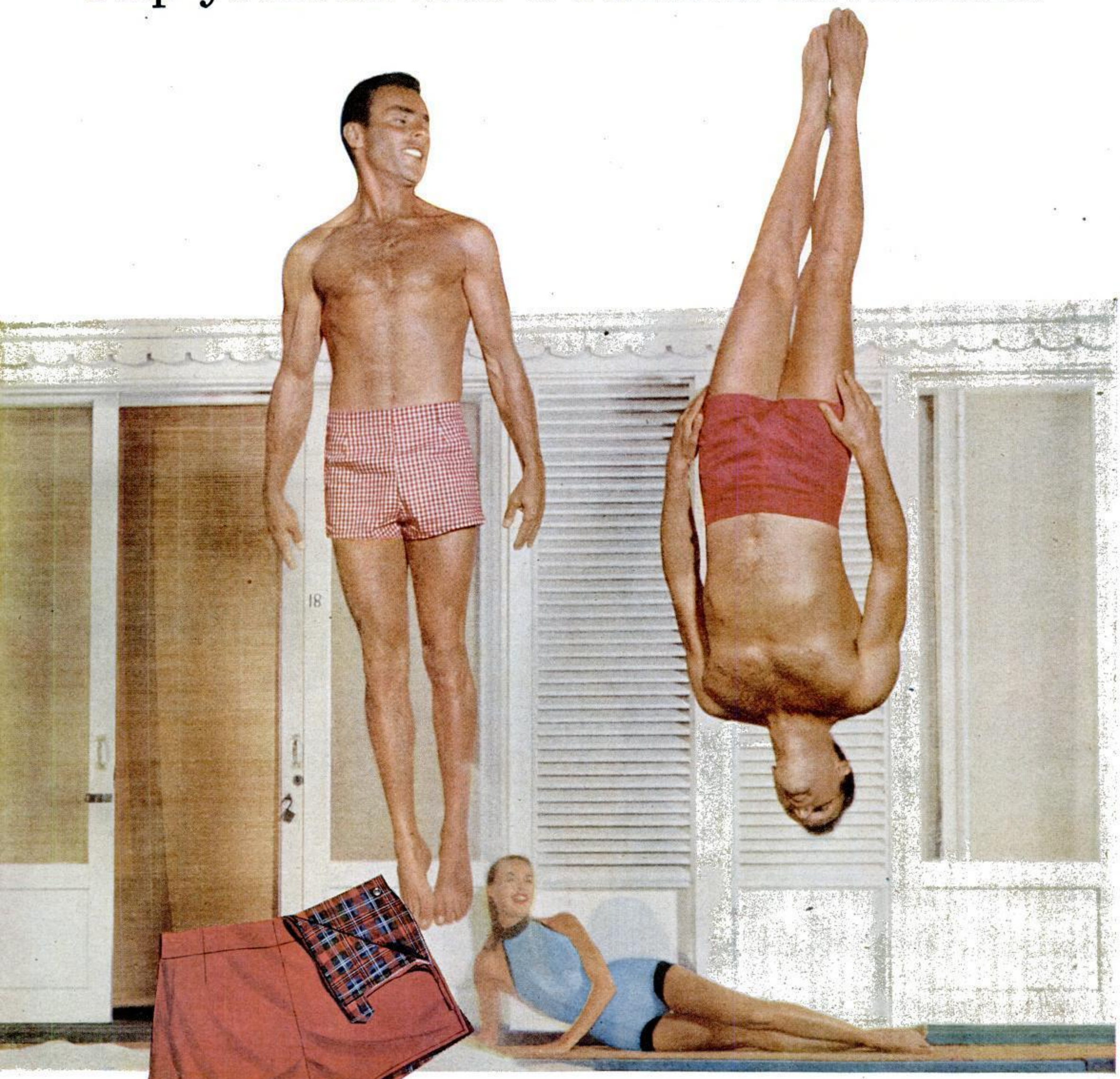


TESTING WING TANK designed to increase B-52 range, Blumenthal (*right*) and engineer discuss instrument reports as "slosh-vibration" rig shakes tank.

CONTINUED

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Flip yourself into a Jantzen Reversible!



this →

becomes

this →



Two swim trunks for the price of one—all you have to do is flip these remarkable reversibles inside out, and you have a brand new pattern!

One side features a smart checked cotton, the other side a solid color. If you like tartans (and who doesn't?), the authentic imported clan patterns are great. Of course they, too, are solid color when flipped inside out.

Many wonderful color combinations.
All in sizes 28 to 36. Just $5.95.

Jantzen

Jantzen Inc., Portland, Oregon

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Beer has its own friendly way of saying...

"Come and get it"

Whether you're camping in Yosemite or just having a barbecue in your back yard—it's not a *real* cook-out unless there's good American beer or ale on hand.

Indoors and out . . . with or without food . . . there's nothing like cool beer when you feel like relaxing. How about having some right now?

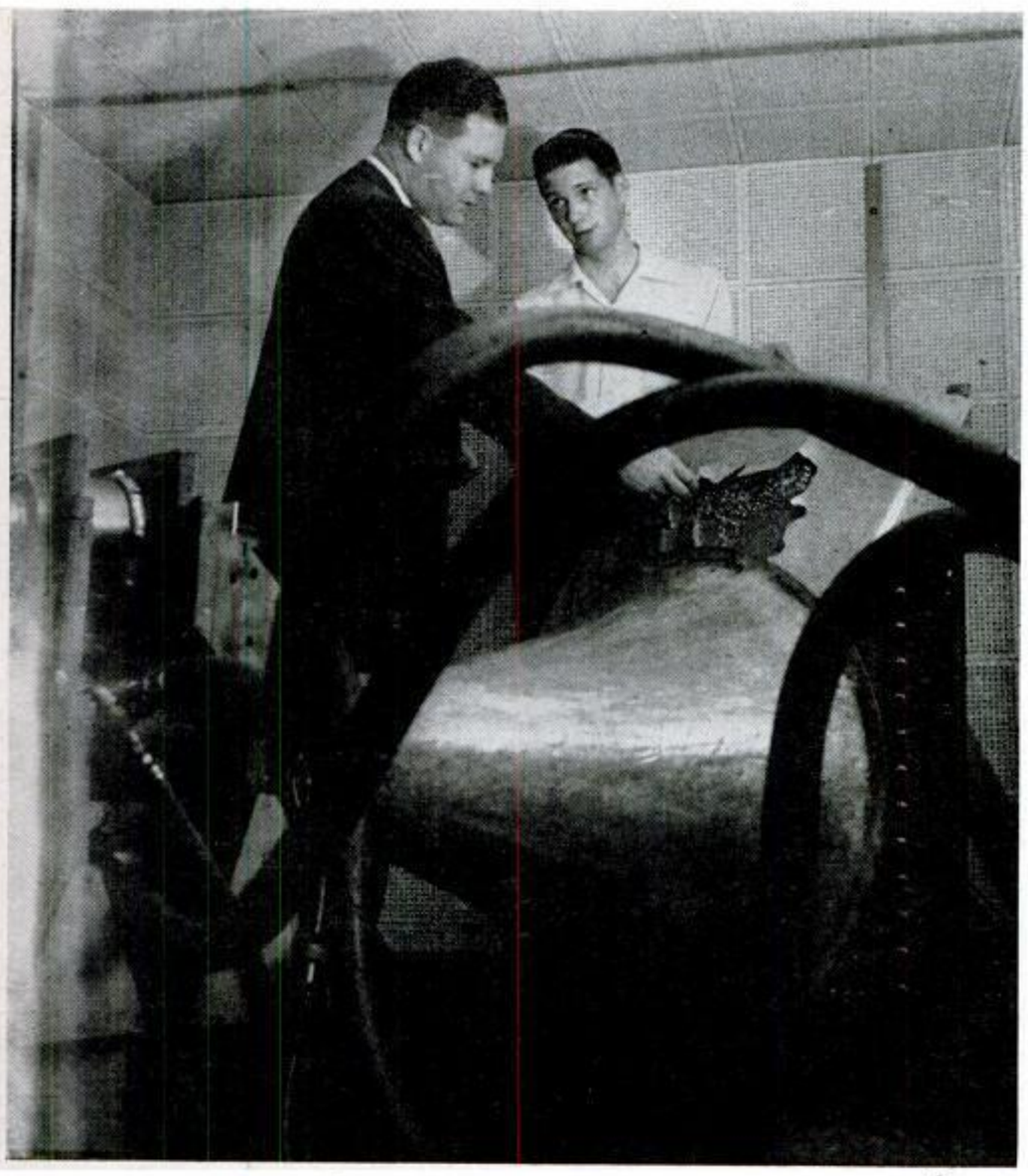


Make sure the glass is clean—rinse just before using. Makes good beer taste even better.

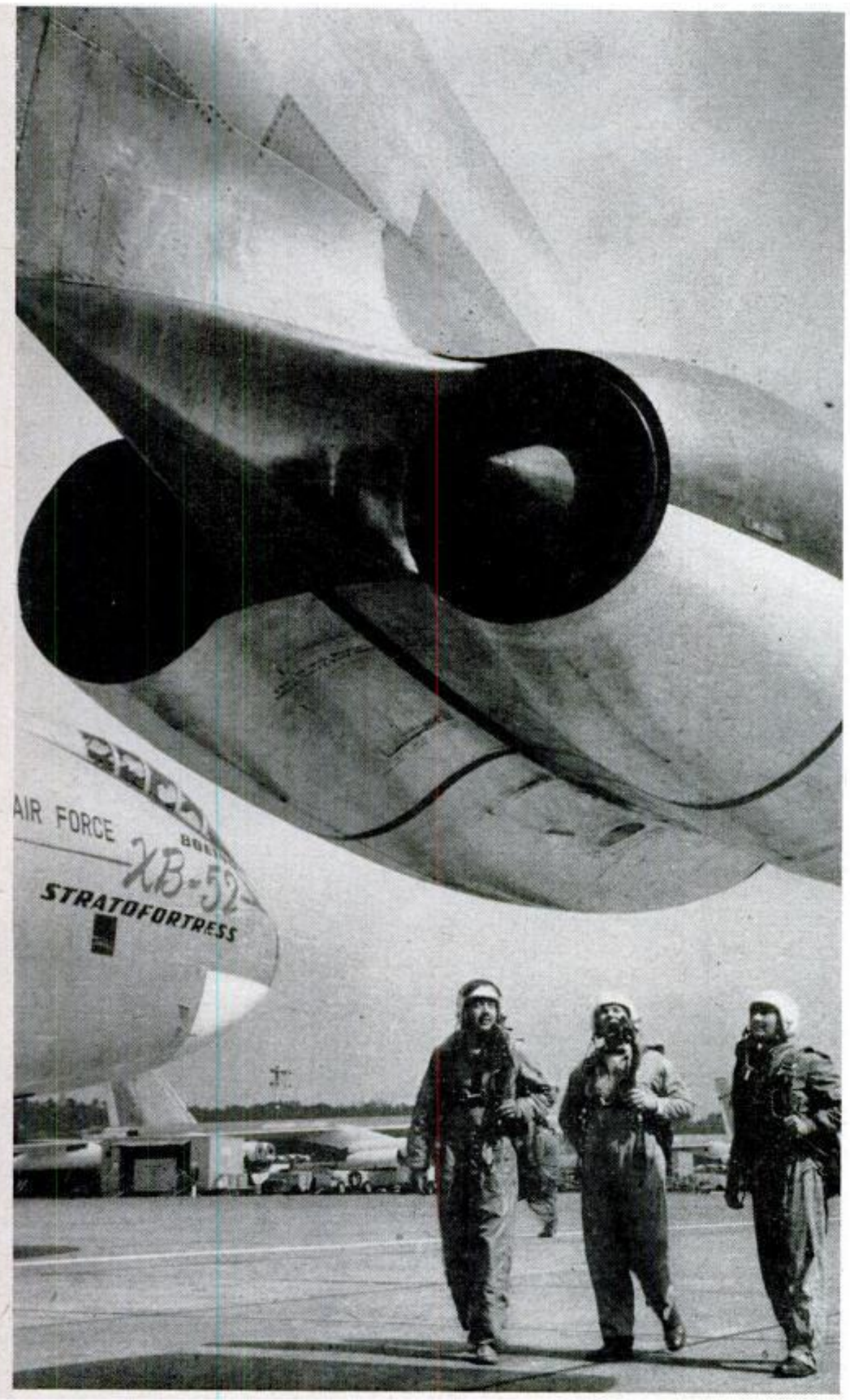
Beer Belongs—*Enjoy it!*

AMERICA'S BEVERAGE OF MODERATION

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TORTURING METAL, Blumenthal inspects a part wrecked by the fury of 160-decibel sound. He seeks ways to avoid destructive effect of jet noise.



GOING ALOFT, Blumenthal (*center*) eyes intakes of B-52. This flight gave practical test of nacelle design intended to equalize forces on jet compressors.

Some spark plugs are designed for low speeds—
some spark plugs are designed for high speeds, but . . .

Only new POWER TIP "fires up" your engine at all speeds!





Now at last a spark plug hot enough at low speeds to resist fouling, yet cold enough at highway speeds to check pre-ignition. New Auto-Lite Resistor Spark Plug with Power Tip "fires up" your engine for peak performance and economy at all speeds.

At low speeds, the Power Tip gets hotter than conventional plugs . . . burns away fuel and oil deposits that cause engine misfire, wasting fuel and power.

At high speeds, the Power Tip keeps cool—takes full advantage of the cooling action of incoming fuel gases. It checks pre-ignition, safeguards power and performance at highway speeds.

TEST-PROVED IN 17 DIFFERENT MAKES!
Fits all these cars with overhead-valve V-8 engines using 14 mm. spark plugs: Buick • Cadillac Chevrolet • Chrysler • De Soto • Dodge • Ford Hudson • Imperial • Lincoln • Mercury • Nash Oldsmobile • Packard • Plymouth • Pontiac Studebaker • See your nearest Auto-Lite Spark Plug Dealer.



AUTO-LITE RESISTOR SPARK PLUG WITH POWER TIP

Auto-Lite manufactures over 400 products, including Spark Plugs, Batteries, Wire and Cable, and Automotive Electrical Systems . . . sold throughout the United States and Canada.

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AERIAL ATOMIC REACTOR, strung between 324-foot towers above Oak Ridge, Tenn., tests methods and materials by which crewmen of first nuclear-powered aircraft might be shielded from the lethal radiation of their own reactor engines. Reactor's elevation reduces radiation bounce-back from the ground. Scientists in underground control room near towers observe round-bottomed reactor through TV cameras, measure radiation with barrel-shaped detector suspended beside it.

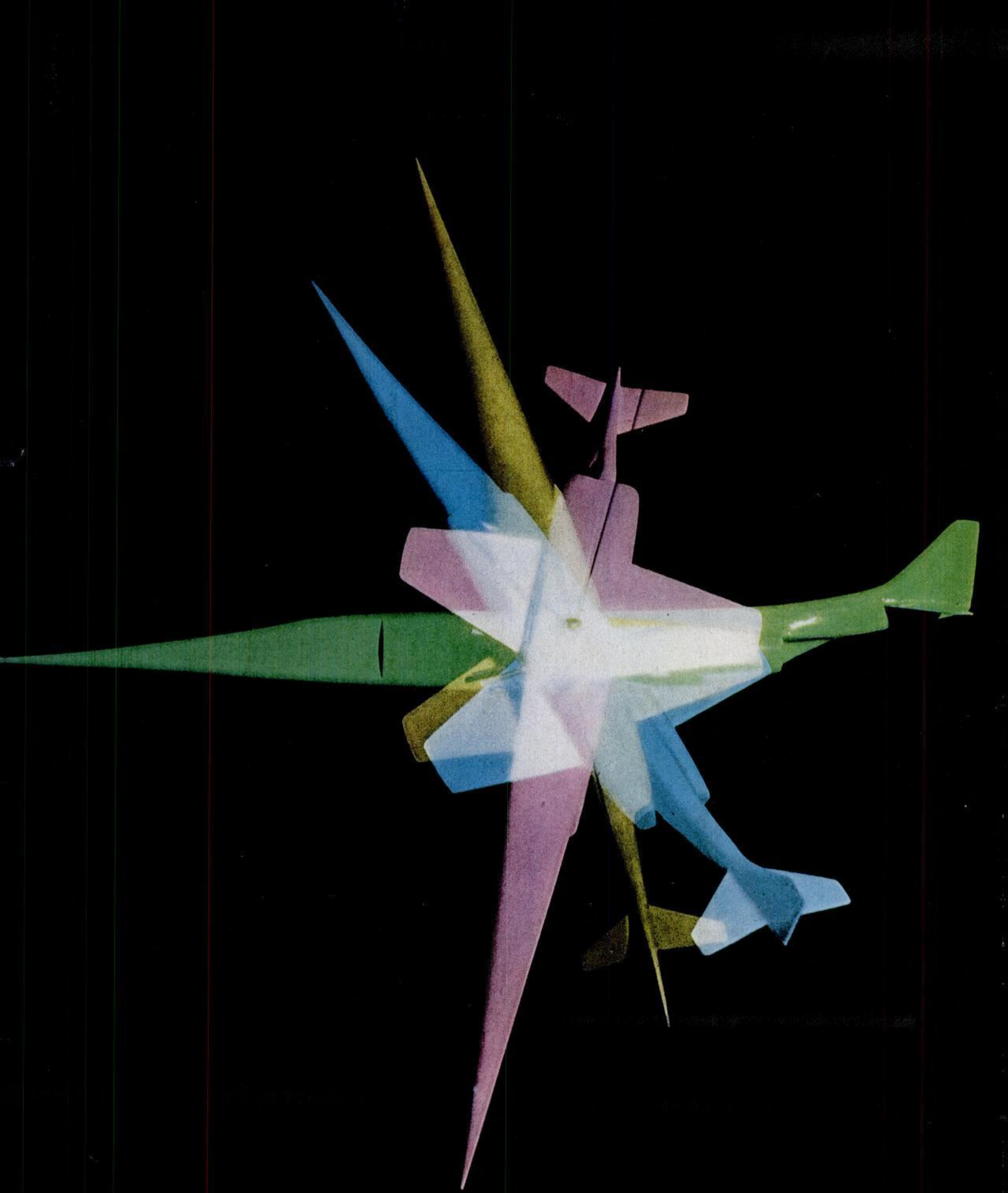
PLUNGE INTO THE FUTURE

Almost unlimited power brings man to barriers of almost unbearable speed, heat

The science of flight, until 1945 only part of a larger military technology, has since become the subject of the most costly and concentrated research race in history. This massive effort, coordinated by the military services and the National Advisory Committee for Aeronautics, has revolutionized aircraft performance. In 10 years it has tripled speeds and doubled altitudes by developing powerful jet, ramjet and rocket engines.

The new power plants have shot aircraft vertically off the ground and horizontally through the sonic barrier. They have taken planes into a mysterious speed range above 1,000 mph where control surfaces begin to lose their grip on the atmosphere, steel wings flutter like rubber and structural strength is drained away by the heat of air friction. The earth-conditioned reflexes of the man along for the ride are often too slow to control his flight and the reflexes themselves may go out of control under the strange conditions of high speed flight. While scientists struggle with these problems created by their accomplishments in the field of power, development of more power goes on at an even faster rate (*next page*).

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INHERENT INSTABILITY, a major problem resulting from modern elongated aircraft design, is demonstrated by repeated exposures, each in different color, of model of experimental plane, the X-3. The plane hangs from a wire at Ames Aeronautical Laboratory near San Francisco. Instability of shape causes model to slew about violently when rolled. Green shows stable position before roll. Pink and yellow show extreme yaw that can swing full-scale planes out of control.

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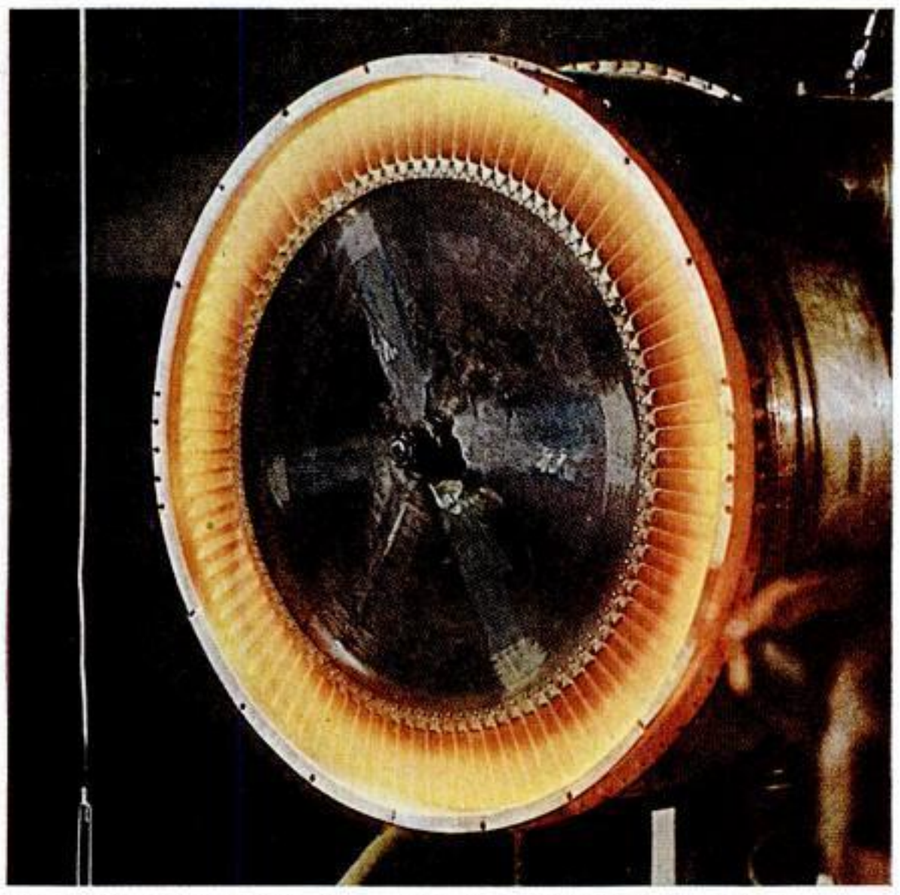
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THREE ROCKET ENGINES ANCHORED TO GREAT TEST STANDS BLAST OUT FIERY POWER IN SANTA SUSANA HILLS NEAR LOS ANGELES WHERE ENGINEERS WORKING

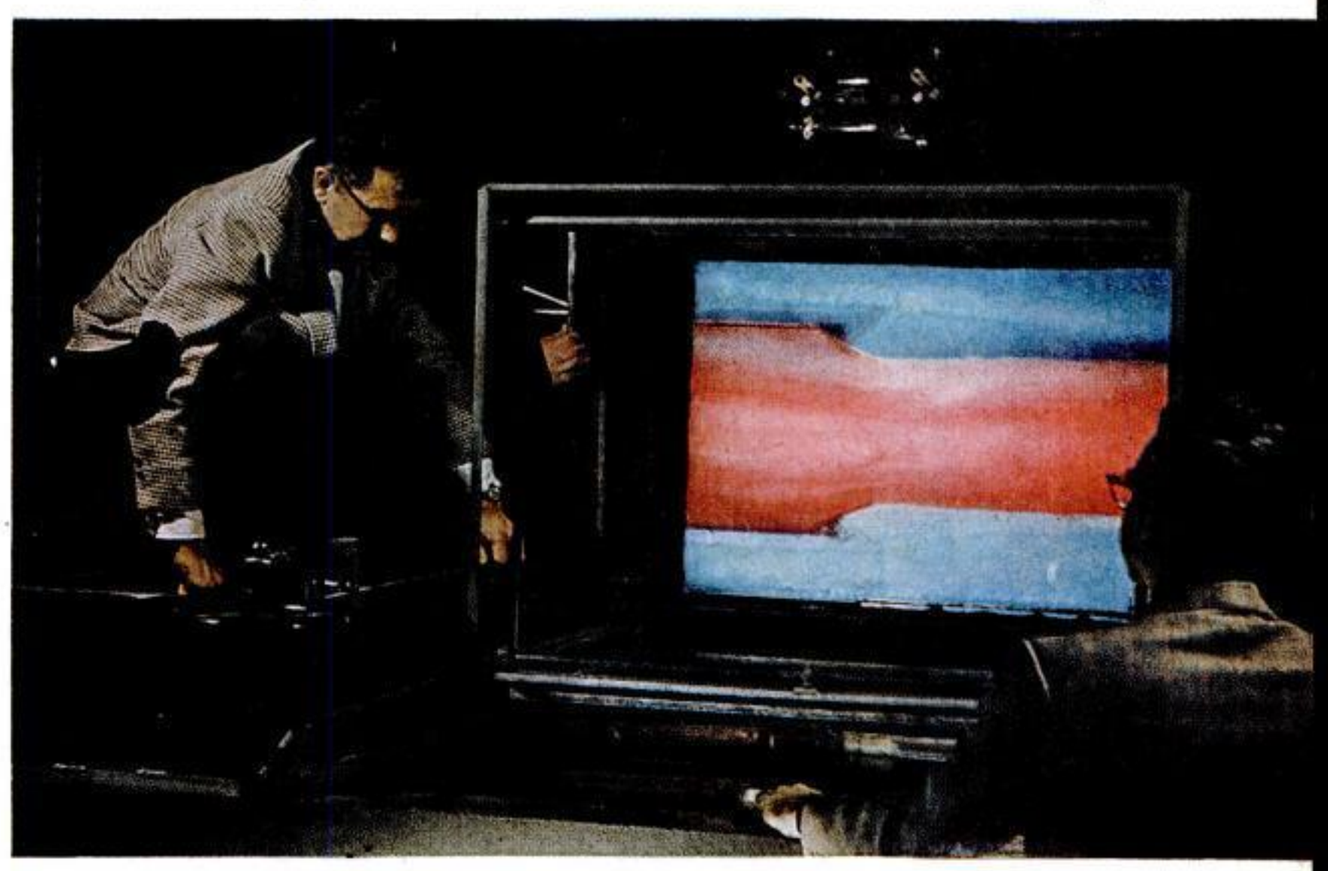
PYROTECHNIC POWER—ROCKETS,

U.S. research, moving ahead from British turbojet and German rocket developments of World War II, is creating a new order of power, capable of propelling planes and missiles to and beyond the endurance limits of men and materials. The most potent of the modern engines, those being perfected for use in intercontinental missiles, are tested at the outdoor laboratory of North American Aviation's Rocketdyne division (*above*), largest rocket research center in the Western Hemisphere. Here engines designed to fly above the atmosphere are lashed to earth, wired to hundreds of recording instruments, and fired. Shrieking hideously and flooding valleys with infernal exhaust, they yield research data for future missile, satellite and manned flight propulsion. Through such tests scientists have solved the basic problems of rocket engines. Now for the first time in history engines of almost any conceivable power can be produced. Their limitations are determined only by military demand and ability to pay.

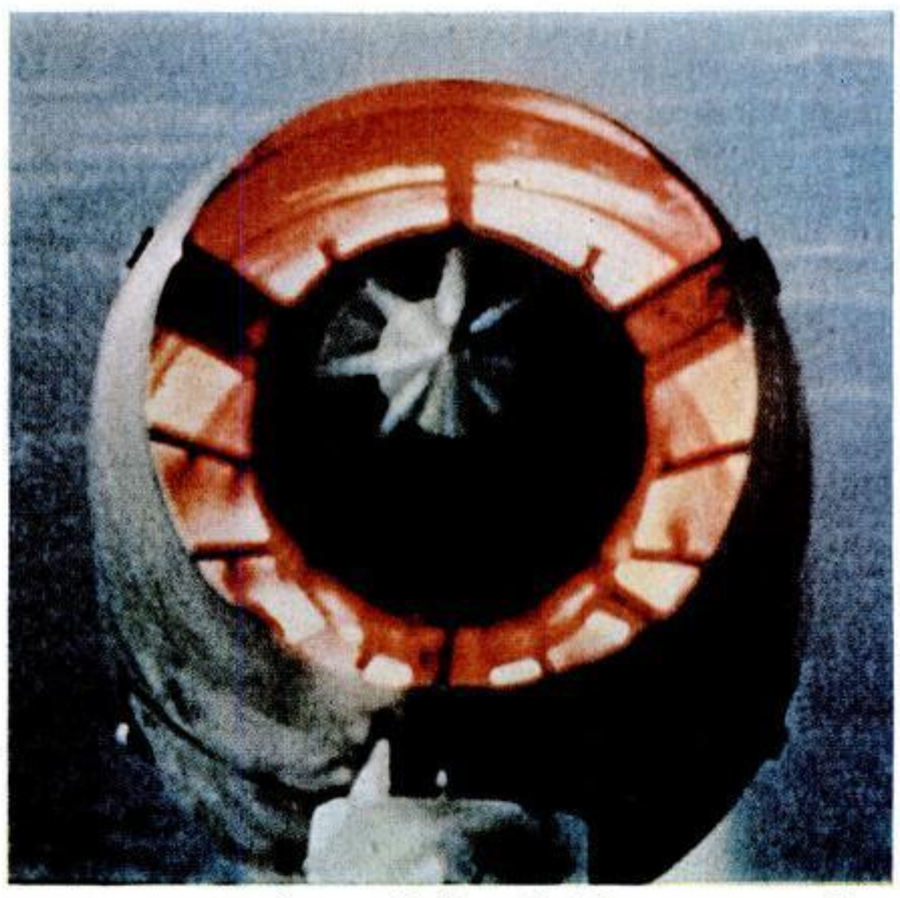
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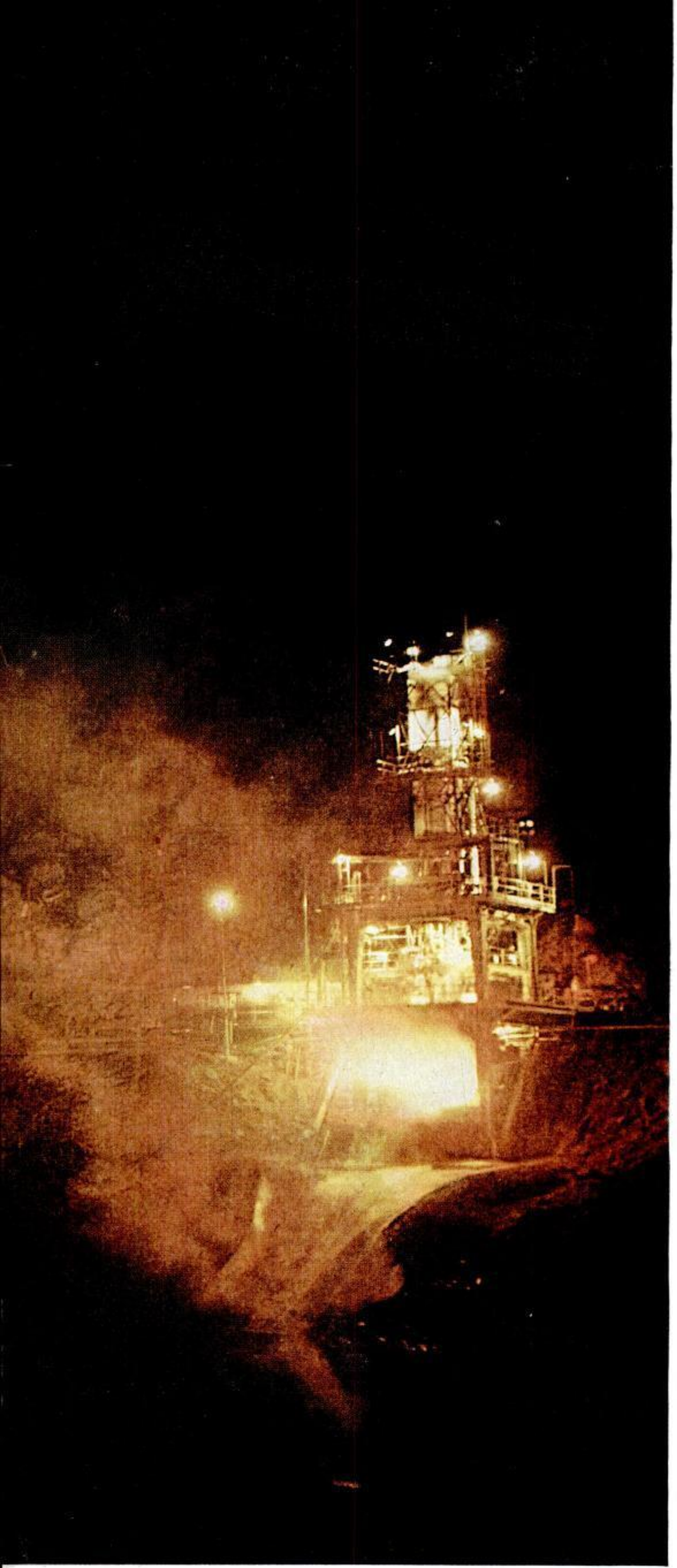
SPINNING TURBINE glows white-hot at NACA's Lewis Laboratory in Cleveland where engineers test its limitations in search for materials able to withstand greater heat to make possible greater jet power.



SIMULATED JET EXHAUST created by fluid, dye and strips of metal in water table, reflected in mirror, allows engineers at General Electric's Evendale Plant in Cincinnati to study flow of gases.



FLYING RAMJET, photographed in mid-air by camera on airframe it propels, works only at speeds high enough to ram air into its tube. Thus compressed, air is burned with fuel to give forward thrust.



BENEATH THE FULL MOON DEVELOP POWER THAT COULD SOMEDAY REACH IT

JETS, RAMJETS

For manned flight within the atmosphere, turbojet engines have been raised from 6,000-thrust hp at flight speeds in 1946 to 60,000 today. Turbojets, held back by physical limitations of their turbines, are now approaching their top speeds of near 2,000 mph. The ramjet engine, already flying in missiles, shows promise of propelling aircraft to speeds above 3,000 mph. To develop indefinitely sustained speed, research into atom-powered flight is being rushed by more than a dozen corporations.

CONTINUED

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AEROELASTICITY TEST is made on a model photographed head-on in a wind tunnel at the Massachusetts Institute of Technology. Repetitive exposures show bending of the wings which are comparable in stiffness to those of jet bombers like the Boeing B-47. The flutter increases in violence as the speed is increased and finally snaps off the wing tip (*upper right*). This test gives engineers a measure of both the force of the flutter and the elastic limits of the wing.

MODEL OF 1,500-MPH LOCKHEED F-104 IN AMES AERONAUTICAL LABORATORY'S NEW 2,000-MPH WIND TUNNEL, FIRST OF ITS SIZE IN THE U.S., TELEGRAPHS HIGH

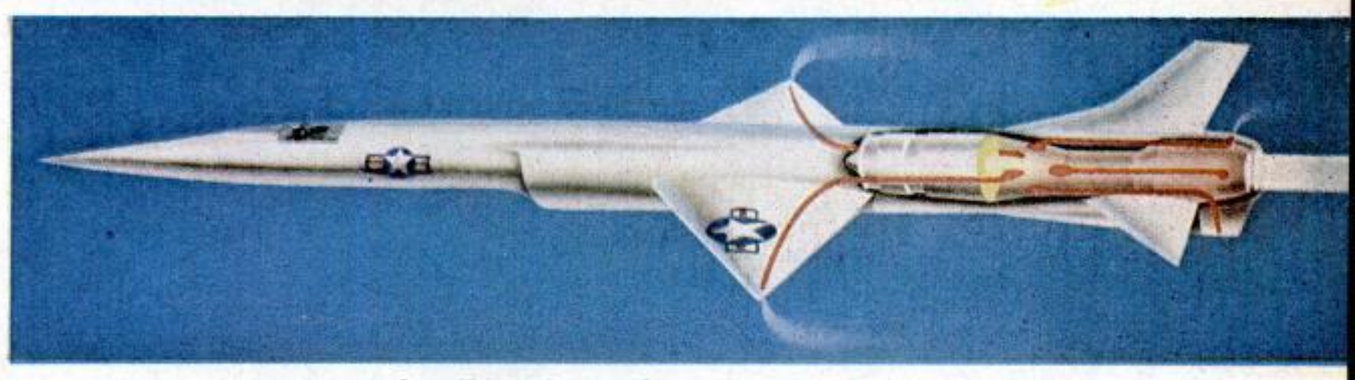
A STRANGE WORLD OF SUPER SPEED

Driven by the new power plants to speeds greater than that of an artillery shell, some new planes have sometimes flown wildly out of control in ways that aerodynamicists could neither predict nor explain. To investigate the threats of this speed range, scientists rush construction of new research facilities like NACA's $28 million supersonic wind tunnel (*below*). With these they will be able to investigate two pressing problems of high speed flight: aeroelasticity and supersonic instability.

Aeroelastic vibrations, created as surfaces stretch and bounce back under enormous air pressure, can rip wings from aircraft less than a second after they begin. Stable flight is sabotaged by a ghostly law of supersonic aerodynamics—as speed goes up, effectiveness of wing and tail surfaces evaporates as if the surfaces themselves were disappearing. Combinations of these and other effects can send planes slewing broadside to destruction against the full force of the supersonic wind blast.

Science is finding solutions to aeroelasticity in new shapes for stiff, stubby wings, like those of the F-104 model below. But as wing size diminishes so does their stabilizing influence, and scientists are now turning to radically new principles such as jet blast control (*right*) that promise to be equally effective within the atmosphere or out in space.





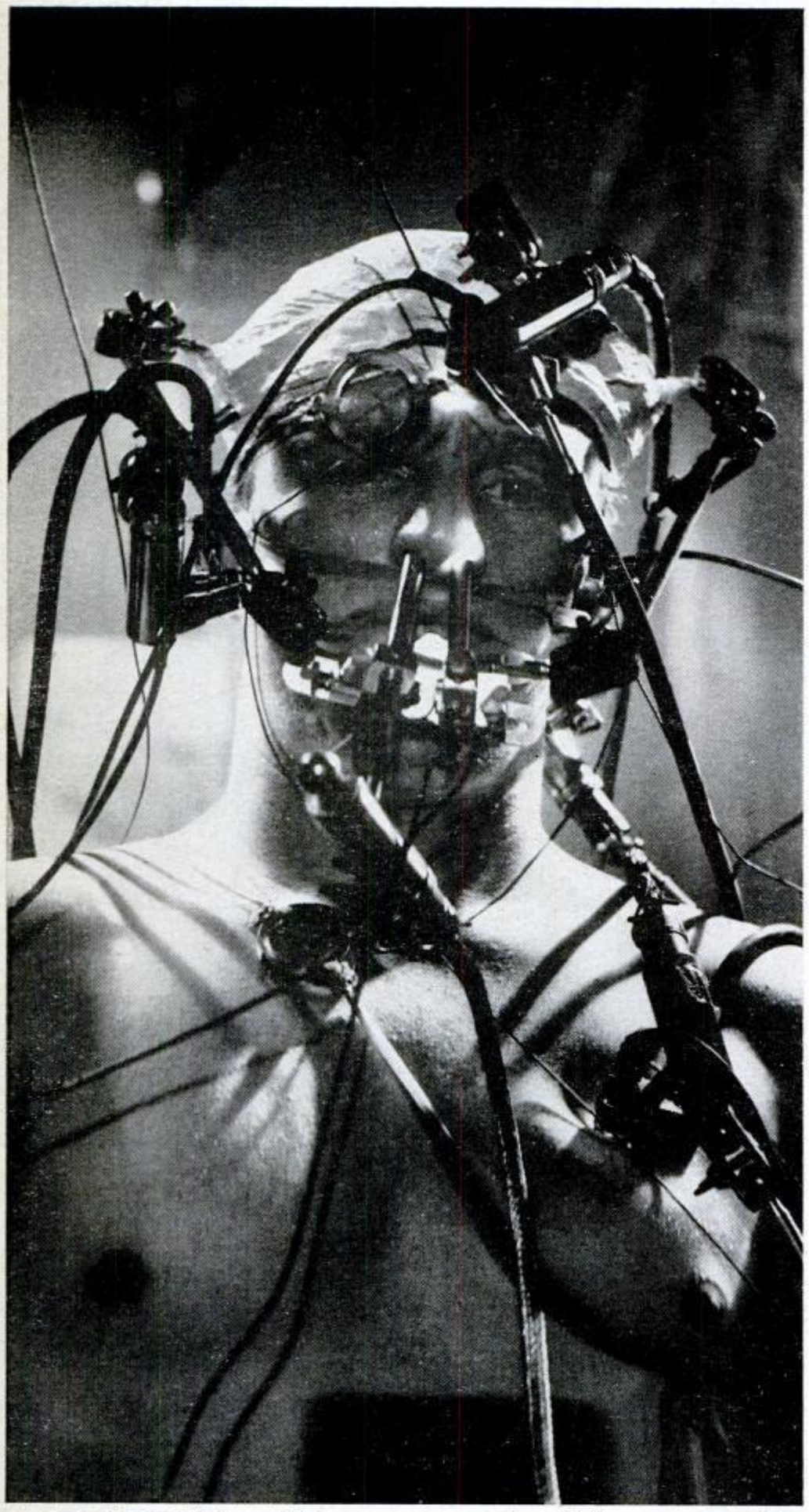
STABILITY SYSTEM is tested at Edwards Air Force Base by NACA engineers who balance iron cross by shooting gas jets from its tips (*top*). They are investigating application of principle to possible future supersonic designs (*bottom*).

SPEED FLIGHT DATA THROUGH WIRES IN TAIL TO INSTRUMENT PANELS (VISIBLE THROUGH WINDOW) BY WHICH AN NACA ENGINEER CHECKS ITS TEST POSITION



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HEAT ON FLESH is studied on man exposed to 106° temperature. Face bristles with devices for recording changing skin temperatures and blood flow.

SCOURGE OF HEAT

Having overleapt many obstacles to faster flight, scientists now confront the most formidable barrier of all—heat. When a plane flies through the atmosphere air friction heats the plane's metal skin. The faster the flight, the more intense the heat. Already jets fly so fast that pilots would be roasted in their cockpits if it were not for powerful refrigeration equipment. At St. Louis University Medical School the Air Force sponsors basic research on the specific reaction of the body to heat. In the study photographed above they chart perspiration patterns to guide them in designing a ventilated flight suit. At 1,500 mph the heat softens the plane's aluminum skin and warps the wing. At even higher speeds fuel boils. Eventually the plane becomes incandescent (*opposite*) and burns up like a meteor. To counteract the heat scientists are hunting for tougher alloys, are studying the use of porous metal for the skin and of pumping coolants through it—in effect, making it perspire. But the final solution may be to circumvent the barrier by building planes which operate high above the atmosphere, where there is not enough air to cause dangerous friction.

HEAT ON METAL is studied with plane model held in 3,000° rocket exhaust. T is corresponds to effect of air on actual plane flying at 4,500 mph at sea level. First nose, wing edges glow (*top*). Next nose melts and grows blunter as wings melt (*center*). Then fuselage glows (*bottom*), wings disintegrate.

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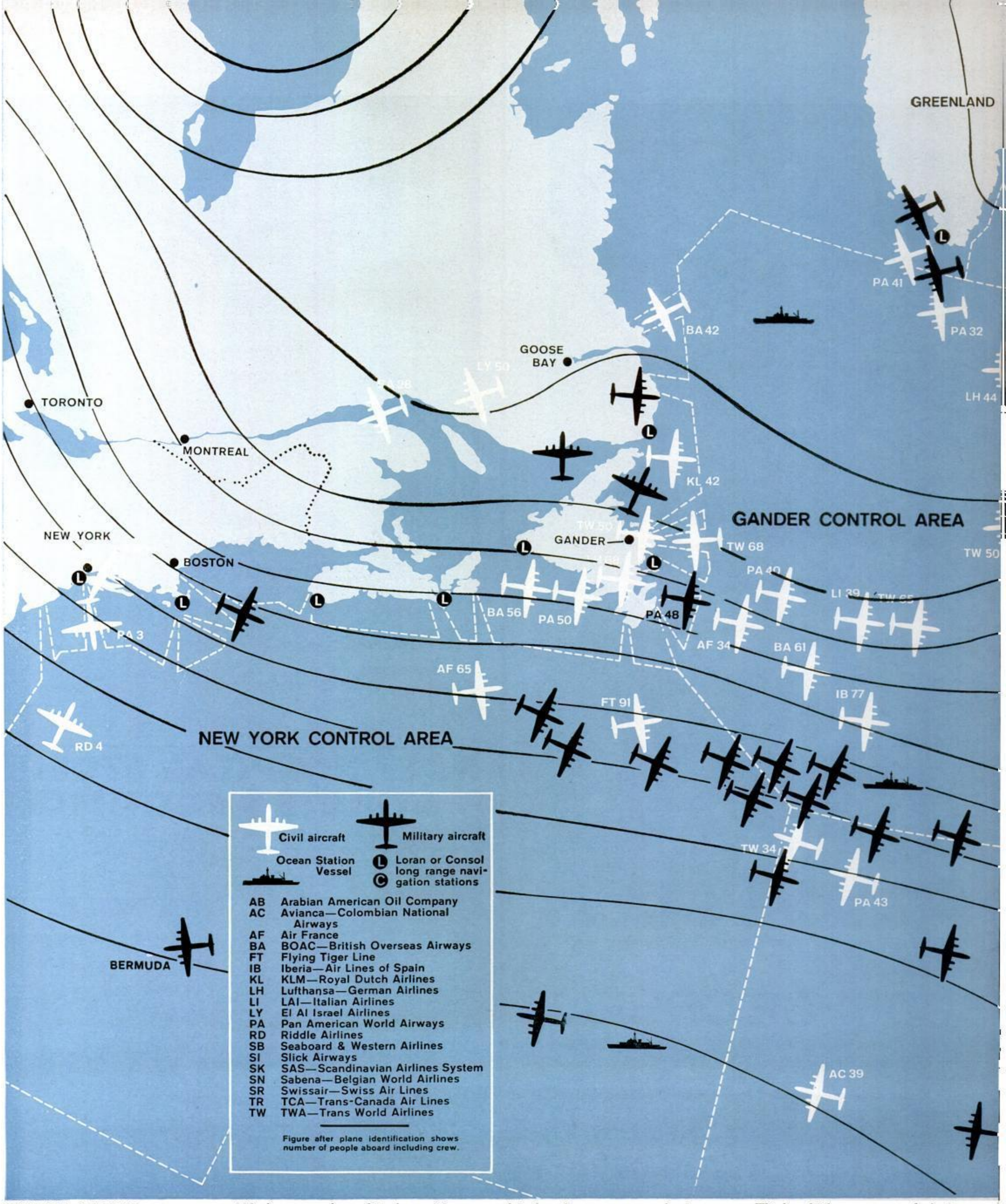
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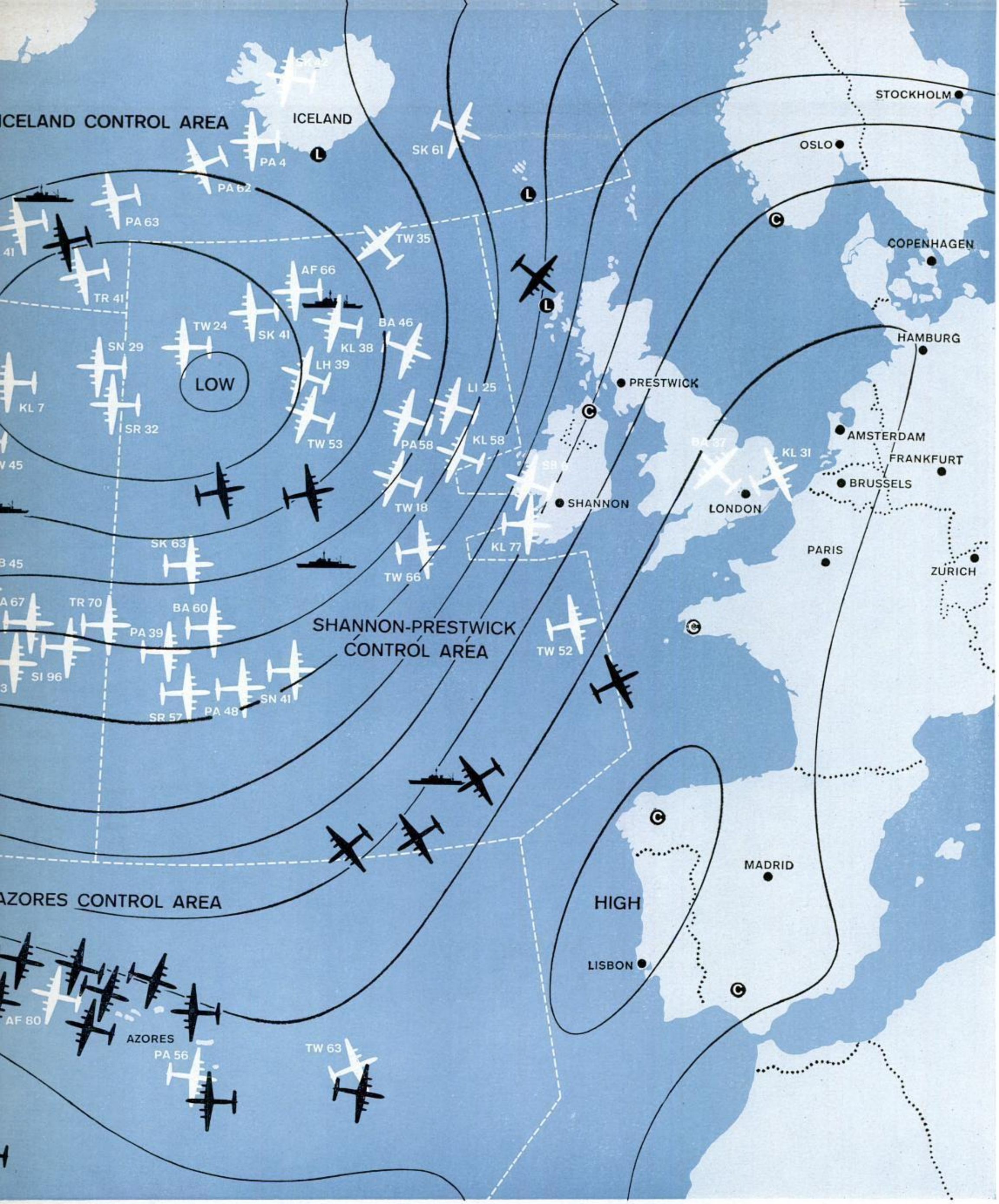
OVER THE ATLANTIC at one moment 110 planes were located in the positions indicated here. Superimposed on map is a weather chart; curving lines mark altitudes of constant atmospheric pressure. Winds, which run counterclockwise around low pressure area, are stronger where lines are close together. Planes

A SINGLE MOMENT OF

The extraordinary future of international air travel is best foretold in the busy pattern of the present. The map above shows air activity during a single actual moment in the air over the Atlantic—a quiet moment, darkened by night. It is 4 a.m. on May 5, 1956 in London, 11 p.m. of the evening before across the ocean in New York. But though the scene is far from human habitation, the air is filled with the roar of big planes and with the disembodied voices of pilots, radio operators and traffic controllers exchanging information.

There are 110 planes engaged at this moment in flying over the ocean. Of them 39 are military aircraft on regular training missions or engaged in carrying personnel and cargo to and from overseas bases. One is an oil company plane heading from New York to Amsterdam. The remaining

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bound for Europe skirted south of low off Iceland to make use of west winds. As they proceeded from one area to another, planes came under direction of various control centers. Loran and Consol stations along the coasts sent out radio pulses which plane crews picked up to determine their geographic positions.

BUSY OCEAN TRAFFIC

70 are transport planes belonging to 18 airlines engaged in flying passengers and cargo regularly across the Atlantic. Aboard them are 3,295 passengers and crew.

Two facts about the chart show how much of the air age is an American achievement. Every plane shown here was made in the U.S.—by Douglas, Lockheed, Boeing. And U.S. airlines are operating almost as many of the commercial planes (34) as carriers from all the other nations put together.

These lanes over the Atlantic are the busiest in the international air. But at this moment other lines operating out of the U.S. and Europe are sending planes on around the globe in opposite directions to meet in distant places and bind the world in a careful meshing of flight schedules.

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AIRMAN WITHOUT WEIGHT

As the air age progresses into space travel, fliers will need to deal more and more with the tricky and troublesome phenomenon of weightlessness, which is already encountered occasionally in aerial maneuvers. This condition, occurring when the force of gravity is counteracted, is here induced artificially in a DC-3 flying a gradually descending curve over Wright-Patterson Air Force Base. When upward centrifugal force exactly balanced the downward pull of gravity on his body, the man above floated free between the protective mattresses. Many pilots find this condition psychologically confusing. The subject here could not do a simple arithmetical sum when instructed by the scientist belted to a seat nearby.

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